CA2ALØG
R21
1964 c.2

ALBERTA LEGISLATURE LIBRARY
3 3398 00402 6851

LIBRARY
VAULT

MAR 2 1 1975
c 2

OGCB REPORT 65-8

RESERVES OF GAS, NATURAL GAS LIQUIDS, CRUDE OIL AND SULPHUR PROVINCE OF ALBERTA

DECEMBER 31, 1964

DONATED JAN 9 1975

OIL AND GAS CONSERVATION BOARD
603 SIXTH AVENUE SOUTH WEST • CALGARY, ALBERTA

Digitized by the Internet Archive
in 2019 with funding from
Legislative Assembly of Alberta - Alberta Legislature Library

RESERVES OF GAS, NATURAL GAS LIQUIDS, CRUDE OIL AND SULPHUR PROVINCE OF ALBERTA

DECEMBER 31, 1964

OIL AND GAS CONSERVATION BOARD

603 SIXTH AVENUE SOUTH WEST • CALGARY, ALBERTA

PRICE $2.00 (Sales Tax Included)

PRICE $5.00 (Sales Tax included)

603 SIXTH AVENUE SOUTH WEST • CALGARY, ALBERTA

OIL AND GAS CONSERVATION BOARD

DECEMBER 31, 1964

PROVINCE OF ALBERTA

CRUDE OIL AND SULPHUR

RESERVES OF GAS, NATURAL GAS LIQUIDS,

TABLE OF CONTENTS

		Page
I.	The Established Reserves of Gas In The Province of Alberta.....	1
II.	The Established Reserves of Natural Gas Liquids In the Province of Alberta.....	33
III.	The Proved Recoverable Reserves of Crude Oil In the Province of Alberta.....	41
IV.	The Established Reserves of Sulphur In The Province of Alberta.....	66
V.	Trends In Growth of Gas and Crude Oil Reserves In the Province of Alberta.....	70
	(a) Trends in Growth of Gas Reserves.....	71
	(b) Trends in Growth of Crude Oil Reserves..	74

LIST OF TABLES

		Page
Table I-1	The Established Reserves of Gas In The Province of Alberta.....	7
Table II-1	The Established Reserves of Natural Gas Liquids In the Province of Alberta.....	38
Table III-1	The Proved Reserves of Crude Oil In The Province of Alberta.....	45
Table III-2	Increase In Proved Initial Recoverable Reserves of Crude Oil Attributable to Fluid Injection Schemes.....	64
Table IV-1	The Established Reserves of Sulphur In the Province of Alberta.....	68
Table V-1	Trends in Exploratory Drilling and Growth of Marketable Gas Reserves In The Province of Alberta.....	78
Table V-2	Trends in Exploratory Drilling and In The Discovery of Initial Marketable Gas Reserves.....	85
Table V-3	Anticipated Appreciation of Gas Reserves and Corresponding Adjusted Reserves Per Exploratory Well.....	86
Table V-4	Trends In Exploratory Drilling and Growth of Proved Crude Oil Reserves.....	87
Table V-5	Trends In Exploratory Drilling and The Discovery of Initial Proved Crude Oil Reserves.....	89
Table V-6	Anticipated Appreciation of Proved Crude Oil Reserves and Corresponding Adjusted Proven Reserves Per Exploratory Well.....	90

LIST OF FIGURES

		Page
Figure I-1	Reserves of Gas (In The Fields and Areas Shown In Table I-1).....	32
Figure III-1	Reserves of Crude Oil (In The Fields Shown In Table III-1).....	65
Figure V-1	Trends In Exploratory Wells.....	91
Figure V-2	Growth of Initial Marketable Gas Reserves.....	92
Figure V-3	Percentage Appreciation of Gas Reserves.....	93
Figure V-4	Trends In The Discovery of Gas Reserves Per Exploratory Well.....	94
Figure V-5	Growth of Initial Proved Crude Oil Reserves.....	95
Figure V-6	Percentage Appreciation of Crude Oil Reserves.....	96
Figure V-7	Trends In The Discovery of Crude Oil Reserves Per Exploratory Well...	97

List of Figures

I. THE ESTABLISHED RESERVES OF GAS IN THE PROVINCE OF ALBERTA

The Board estimates the remaining established reserves of marketable gas in Alberta at December 31, 1964, to be some 35.3 trillion cubic feet, or the equivalent of 37.4 trillion cubic feet of 1000 Btu gas. The present estimate represents an increase of some 2.4 trillion cubic feet since December 31, 1963. It also represents a decrease of 0.4 trillion cubic feet from the estimate contained in the Board's report to the Lieutenant Governor in Council dated November, 1964. The report (OGCB Report 64-11) dealt with applications of Alberta and Southern Gas Company Limited and Trans-Canada Pipe Lines Limited to increase the volumes of gas being removed from the Province. The report contained the Board's estimate of reserves as of June 30, 1964. The decrease results almost entirely from a comprehensive study of the performance of the Pincher Creek Field. Production performance of the pool indicates that the June 30, 1964, estimate of 900 billion cubic feet of initial marketable gas should be reduced to 540 billion cubic feet. A more detailed explanation of the decrease appears later in this report.

While only the established reserves are referred to in this report, the Board does calculate proved and probable reserves of gas. The relationship of the three categories of reserves may be seen by referring to the following definitions:

Proved reserves - in any pool consist of the gas recoverable from the area of the pool completely delineated through the drilling of wells. A portion of the reserves may be under undrilled spacing

units which are so close and so related to drilled spacing units that there is every reasonable probability they will be produced when the spacing units are drilled or will be recovered by existing wells.

Probable reserves - in any pool consist of the gas estimated to be recoverable from beyond the proved limits of the pool. The probable pool limits are based on normal geological expectation.

Established reserves - are the reserves of gas whose existence and estimated amount can reasonably be counted upon. They include all of the proved reserves and a judgement portion (usually 50 per cent) of the probable reserves.

In its estimate of reserves, the Board has had regard for the estimates presented by the industry at various hearings and in many of the applications submitted to it during the year. In many cases, these presentations have provided the Board with data previously unavailable, and which have assisted the Board considerably in making its estimate of reserves.

A comparison of the December 31, 1963, estimate and the December 31, 1964, estimate appears in the following tabulation:

	Actual Basis (Trillions of Cubic Feet)	1000 Btu Basis (Trillions of Cubic Feet)
Established marketable gas at December 31, 1963	32.9	34.7
Additions to reserves during 1964	3.2	3.5
Marketable gas produced during 1964	0.8	0.8
Established marketable gas at December 31, 1964	35.3	37.4

As expected, the increase in reserves has been the result of development drilling, extending reserves found in previous years. Wildcat drilling in 1964 discovered some 0.3 trillion cubic feet of new gas, which has not had sufficient time to increase through reserve appreciation.

The Board's estimate consists of reserves of solution, associated, and non-associated gas. A comparison of the 1963 and 1964 estimates of remaining established marketable gas on an actual heating value basis is presented for the three categories in the following tabulation:

Classification of Reserves	At Dec. 31, 1963	At Dec. 31, 1964	Change
Solution	2.7	3.1	+0.4
Associated	4.0	4.2	+0.2
Non-associated	26.2	28.0	+1.8
Total Reserves	32.9	35.3	2.4

The more significant changes in the 1964 estimate of reserves have occurred in the following areas:

Area	Zone	Board's Estimate as of Dec. 31, 1963 Bcf	Board's Estimate as of Dec. 31, 1964 Bcf	Change Bcf	Remarks
Beaverhill Lake-Fort Saskatchewan	Viking	300	429	+129	Pressure decline study indicates a common reservoir.
Bigstone	Leduc	50	250	+200	Additional data.

Area	Zone	Board's Estimate as of Dec. 31, 1963 Bcf	Board's Estimate as of Dec. 31, 1964 Bcf	Change Bcf	Remarks
Burnt Timber	Mississippian	120	250	+130	Additional data.
Carstairs	Mississippian	834	680	-154	New drilling.
Crossfield	Mississippian	1359	1510	+151	Additional data.
Edson	Mississippian	900	1500	+600	New drilling.
Jumping Pound West	Mississippian	100	700	+600	New drilling and additional data.
Marten Hills	Wabiskaw	40	450	+410	New drilling and additional data.
Pembina	Cardium	650	760	+110	Increase in oil reserves.
Pincher Creek	Mississippian	810	350	-460	Reservoir performance.
Pine Creek	Leduc	464	305	-159	Reservoir performance.
Waterton	Mississippian	673	1071	+398	New drilling and additional data.

The Board has made substantial changes in its estimate of reserves in the Edson, Jumping Pound West, Marten Hills, Pincher Creek, and Waterton Fields. The changes were made for reasons that are discussed under each field.

Edson

Eleven wells were drilled during the year extending considerably the reservoir both eastward and southward.

Jumping Pound West

The drilling of four wells has established a pool some 16 miles long and approximately one mile wide. The area formerly known as Morleyville is now included in the Jumping Pound West pool. The addition of this area and the new drilling has increased the marketable reserves from 150 billion cubic feet to 700 billion cubic feet.

Marten Hills

Five new wells drilled in 1964 extended the Wabiskaw pool southward.

Pincher Creek

The performance of the pool during the last few years has not been as expected, primarily because of substantial volumes of water being produced in the north half of the pool. In addition, the invasion of water will, in the Board's opinion, trap some gas, which will not be recovered. For these reasons, the Board has reduced the original marketable gas expected to be recovered from 900 billion cubic feet to 540 billion cubic feet. This reduction is consistent with the pool pressure history.

Waterton

The performance of the pool in sheet III of the Mississippian formation has been much better than predicted previously. As a result, the Board has increased its estimate of initial marketable gas by 430 billion cubic feet.

Details of the Board's estimate of established reserves are presented in Table I-1. The table does not show individually fields or areas having a marketable reserve less than ten billion

cubic feet unless the reserve is supplying a market. However, the sum of these reserves is shown at the end of the table, and is included in the Provincial total. The location of the fields and areas contained in the table is shown on Figure I-1.

TABLE I - 1

OIL AND GAS CONSERVATION BOARD

ESTABLISHED RESERVES OF GAS IN THE PROVINCE OF ALBERTA, DECEMBER 31, 1964

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Acheson	Viking	4	25/5	3	1	2	1020*	2	Gas sold to Northwestern Utilities, Limited.
	Basal Blairmore	37	20/15	25	1	24	1020	24	
	Leduc Solution	76	40/55	20	4	16	1140	18	
Acheson East	Basal Blairmore	12	15/5	10	-	10	1090	11	Presently considered beyond economic reach.
Aden	Bow Island	5	20/5	4	-	4	1000	4	
	Basal Colorado	6	15/5	5	1	4	1000	4	Gas sold to Canadian Montana Gas Company Ltd.
	Sunburst Swift	3	20/5	2	1	1	1040	1	
	Mississippian	12	10/10	10	3	7	1040	7	
Alderson	Second White Specks	140	20/10	100	-	100	995	100	Presently considered beyond economic reach.
	Bow Island	8	20/5	6	-	6	1000	6	
Alexander	Basal Blairmore	120	10/5	110	92	18	1060*	19	Gas sold to North Canadian Oils Limited and Calgary Power Ltd.
Alix	Basal Blairmore	12	10/5	10	-	10	1090	11	Presenty considered beyond economic reach.
	Nisku Associated and Non-associated	9	15/10	7	-	7	1130	8	
Antelope	Viking	20	20/5	15	-	15	1020	15	Gas sold to Trans-Canada Pipe Lines Ltd.
	Banff	12	20/5	9	-	9	1020	9	
Athabasca	Grand Rapids	6	15/5	5	1	4	1000*	4	Supplies local utility.
	Wabamun	4	10/5	3	-	3	980*	3	Presently considered beyond economic reach.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
ATHABASCA EAST	WABAMUN	2	10/5	2	1	1	1000	1	SUPPLIES LOCAL UTILITY.
ATLEE BUFFALO	BOW ISLAND	120	25/5	85	7	78	970*	76	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
	BASAL COLORADO	7	15/5	6	-	6	1020	6	
	BASAL BLAIRMORE	72	20/5	55	1	54	960*	52	
BANTRY	MILK RIVER	46	20/5	35	-	35	960	34	SUPPLIES LOCAL UTILITY.
	BOW ISLAND	7	20/5	5	-	5	970	5	PRESENTLY CONSIDERED
	SUNBURST ASSOCIATED	13	20/5	10	-	10	1160	12	BEYOND ECONOMIC REACH.
BANTRY EAST	BASAL COLORADO	1	15/5	1	-	1	970	1	PRESENTLY CONSIDERED
	SUNBURST ASSOCIATED	13	20/5	10	-	10	1160	12	BEYOND ECONOMIC REACH. PREVIOUSLY INCLUDED IN BANTRY AREA.
BASHAW	BASAL BLAIRMORE	12	15/5	10	-	10	970	10	PRESENTLY CONSIDERED
	LEDUC ASSOCIATED	17	15/30	10	-	10	1220	12	BEYOND ECONOMIC REACH.
BAWLF	VIKING	11	25/5	8	-	8	1020	8	PRESENTLY CONSIDERED
	BLAIRMORE	3	20/5	2	-	2	1050	2	BEYOND ECONOMIC REACH.
BEAVERHILL LAKE-FORT SASKATCHEWAN	VIKING	620	15/5	500	71	429	1020*	438	GAS SOLD TO NORTHWESTERN UTILITIES LIMITED AND CANADIAN INDUSTRIAL GAS & OIL LTD.
	BLAIRMORE	4	15/5	3	-	3	1000	3	
BELLOY	NOTIKEWIN	9	20/5	7	-	7	1000	7	PRESENTLY CONSIDERED
	GETHING	62	15/5	50	-	50	1000	50	BEYOND ECONOMIC REACH.
	MISSISSIPPIAN	23	10/5	20	-	20	1120	22	
BELLSHILL LAKE	VIKING	6	25/5	4	-	4	1040	4	PRESENTLY CONSIDERED
	BLAIRMORE	37	15/5	30	-	30	990	30	BEYOND ECONOMIC REACH.
	BLAIRMORE ASSOCIATED	3	15/10	2	-	2	990	2	
BENJAMIN CREEK	MISSISSIPPIAN	230	20/20	150	-	150	1070	161	
BERLAND RIVER	LEDUC	440	10/25	300	-	300	1000	300	
BERLAND RIVER WEST	WABAMUN	24	10/30	15	-	15	1020	15	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31/1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Bigoray	Blairmore	14	15/5	11	-	11	1080	12	
	Mississippian	13	15/10	10	-	10	1080	11	
Bigstone	Gething	23	10/5	20	-	20	1100	22	
	Dunvegan	29	10/5	25	-	25	1140	29	
	Wabamun	10	15/40	5	-	5	1050	5	
	Leduc	390	15/25	250	-	250	930	233	
Bindloss	Viking	430	15/5	350	58	292	980*	286	Gas sold to Trans-Canada Pipe Lines Ltd.
	Basal Blairmore	31	15/5	25	-	25	990	25	
Bittern Lake	Viking	3	25/5	2	-	2	1020	2	
	Basal Blairmore	43	15/5	35	-	35	1070	37	
Black Butte	Bow Island	21	15/5	17	1	16	1010	16	Gas sold to Canadian-Montana Gas Company Ltd.
	Basal Colorado	25	15/5	20	5	15	1000	15	
	Blairmore	6	15/5	5	-	5	1000	5	
	Sunburst Ellis	35	10/5	30	19	11	1000	11	Gas sold to Canadian-Montana Gas Company Ltd.
	Mississippian	11	15/5	9	2	7	1020	7	
Blueridge	Detrital	14	10/5	12	-	12	1100	13	Presently considered beyond economic reach.
	Mississippian	1	20/5	1	-	1	1130	1	
Bolloque Lake	Viking	3	25/5	2	-	2	1040	2	Presently considered beyond economic reach.
	Basal Blairmore	11	25/5	8	-	8	1100	9	
Bonnie Glen	Viking	3	15/10	2	-	2	1050	2	
	Blairmore	5	15/10	4	3	1	1100	1	Gas sold to Northwestern Utilities Limited.
	Leduc Associated	430	10/15	330	5	325	1220	396	
	Leduc Solution	530	35/25	260	35	225	1220	275	
Bonnyville	Blairmore	5	20/5	4	2	2	980	2	Supplies local utility.
Boundary Lake South	Cadomin	8	20/10	6	-	6	1060	6	
	Boundary Lake	1	15/10	1	-	1	1050	1	
	Mississippian	37	15/5	30	10	20	1040*	21	Gas sold to Westcoast Transmission Company Limited.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Bow Island	Bow Island	20	20/5	15	-5	20	1110	22	Canadian Western Natural Gas Company Limited storage reservoir.
Boyle-Mustang-Amisk Lake	Blairmore	7	25/5	5	-	5	1000	5	Presently considered beyond economic reach.
	Nisku	6	15/5	5	-	5	990	5	
Braeburn	Cadotte	1	25/5	1	-	1	1050	1	
	Cadomin	4	15/5	3	-	3	1060	3	
	Triassic	33	15/10	25	-	25	1090	27	
	Permo-Penn	52	15/10	40	-	40	1030	41	
Brazeau River	Mississippian	200	15/10	150	-	150	1040	156	Presently considered beyond economic reach.
Brooks	Milk River	9	20/5	7	3	4	990	4	Supplies local utility.
Brooks North East	Bow Island	14	25/5	10	-	10	960	10	
	Basal Colorado	1	20/5	1	-	1	1000	1	
	Mannville	22	20/5	17	2	15	1030	16	Supplies local utility.
	Detrital	11	15/5	9	-	9	1030	9	
Brown Creek	Mississippian	59	20/15	40	-	40	970	39	Presently considered beyond economic reach.
Burnt Timber	Mississippian	390	20/20	250	-	250	1080	270	
Campbell-Namao	Blairmore Associated & Solution	33	20/5	25	10	15	1020	15	Gas sold to Canadian Industrial Gas & Oil Ltd.
Carbon	Viking	9	20/5	7	-	7	1020	7	
	Basal Colorado	4	15/5	3	-	3	1020	3	
	Blairmore	160	15/5	130	6	124	1100	136	Gas sold to Canadian Western Natural Gas Company Limited.
	Mississippian	16	15/5	13	-	13	1080	14	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Caroline	Blairmore	39	15/10	30	-	30	1070	32	
	Mississippian	25	15/10	19	-	19	1020	19	
Carson Creek	Beaverhill Lake	320	15/15	230	-	230	1050	242	Reservoir being cycled.
Carson Creek North	Beaverhill Lake Associated	28	15/15	20	-	20	1100	22	
	Beaverhill Lake Solution	370	60/20	120	2	118	1100	130	Gas injected into Carson Creek.
Carstairs	Basal Blairmore	5	15/10	4	-	4	1100	4	
	Mississippian	1000	15/10	800	120	680	1110*	755	Gas sold to Trans-Canada Pipe Lines Ltd.
Castor	Viking	5	20/5	4	-	4	1090*	4	
	Blairmore	2	10/5	2	-	2	1090*	2	Supplies local utility.
Cessford	Viking	110	15/5	85	3	82	1020*	84	Gas sold to Trans-Canada Pipe Lines Ltd.
	Basal Colorado	1200	15/5	1000	210	790	1020	806	
	Basal Blairmore	430	15/5	350	42	308	1030*	317	
Chigwell	Blairmore	74	10/10	60	6	54	1100*	59	Gas sold to Trans-Canada Pipe Lines Ltd.
Chinook Ridge	Paddy	12	10/10	10	-	10	1020	10	Presently considered beyond economic reach.
	Cadotte	31	10/10	25	-	25	1020	26	
	Notikewin	19	10/10	15	-	15	1020	15	
Chisholm	Blairmore	12	10/5	10	-	10	1020	10	Presently considered beyond economic reach.
Clear Hills	Gething	1	15/5	1	-	1	980	1	Presently considered beyond economic reach.
	Triassic	8	10/5	7	-	7	1030	7	
	Leduc	4	15/5	3	-	3	1070	3	
Clive	Viking	4	20/5	3	-	3	990	3	
	Blairmore	7	15/5	6	-	6	1020	7	Presently considered beyond economic reach.
	Nisku Associated	7	10/15	5	-	5	1150	6	
	Leduc Associated	7	10/25	5	-	5	1200	6	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Cold Lake	Blairmore	6	25/5	4	2	2	1000	2	Supplies local utility.
Comrey	Second White Specks	4	20/5	3	-	3	940	3	
	Bow Island	29	10/5	25	13	12	940	11	Gas sold to Canadian-Montana Gas Company Limited.
Connorsville	Viking	7	20/5	6	-	6	990	6	Gas sold to Trans-Canada Pipe Lines Ltd.
	Basal Blairmore	62	15/5	50	-	50	1130	57	
Countess	Bow Island	92	20/5	70	3	67	1000*	67	
	Basal Colorado	140	25/5	100	39	61	1000*	61	Gas sold to Trans-Canada Pipe Lines Ltd.
	Basal Blairmore	40	20/5	30	3	27	1020*	28	
	Mississippian	2	15/5	2	-	2	960	2	
	Mississippian Assoc.	3	20/10	2	-	2	960	2	
Craigend	Grand Rapids	1	25/5	1	-	1	1000	1	Presently considered beyond economic reach.
	Grosmont	140	25/5	100	-	100	1000	100	
Crossfield	Cardium Solution	68	60/45	15	-	15	1120	17	
	Basal Blairmore	20	15/10	15	-	15	1100	17	
	Mississippian	2000	10/10	1650	140	1510	1120*	1690	Gas sold to Alberta & Southern Gas Co. Ltd. and Westcoast Transmission Company Limited.
	Wabamun	1400	15/50	600	29	571	1120*	640	
Crossfield East	Mississippian	130	10/15	100	-	100	1120	112	
	Wabamun	350	15/60	120	-	120	1060	127	
Dixonville	Gething	12	10/5	10	-	10	1000	10	Presently considered beyond economic reach.
Donalda	Viking	40	20/5	30	-	30	970	29	Presently considered beyond economic reach.
	Basal Blairmore	5	15/5	4	-	4	970	4	
	Detrital	5	20/5	4	-	4	990	4	
Dorothy	Basal Blairmore	24	15/5	19	-	19	1000	19	Presently considered beyond economic reach.
Dowling Lake	Basal Blairmore	5	20/5	4	1	3	1030*	3	Supplies local utility.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
DRUMHELLER	VIKING	3	25/5	2	-	2	1100	2	
	BLAIRMORE	29	10/5	25	-	25	1100	28	
DUVERNAY	VIKING	4	20/5	3	2	1	1000*	1	GAS SOLD TO WESTERN MINERALS LTD. PLANT AND SUPPLIES LOCAL UTILITY.
DYBERG	BELLY RIVER	3	20/5	2	-	2	950	2	PRESENTLY CONSIDERED
	VIKING	8	10/5	7	-	7	1000	7	BEYOND ECONOMIC REACH.
	BASAL BLAIRMORE	12	10/5	10	-	10	1020	10	
EAGLESHAM	GETHING	6	15/5	5	-	5	1000	5	PRESENTLY CONSIDERED
	CADOMIN	6	15/5	5	-	5	1060	5	BEYOND ECONOMIC REACH.
	MISSISSIPPIAN	62	15/5	50	-	50	1110	56	
EDSON	GETHING	24	15/10	18	-	18	1050	19	
	MISSISSIPPIAN	2100	15/15	1500	-	1500	1030	1545	
ELK POINT	MANNVILLE	3	25/5	2	1	1	990*	1	SUPPLIES LOCAL UTILITY.
ELLERSLIE	BLAIRMORE	3	20/5	2	-	2	1000	2	GAS SOLD TO EDMONTON LIQUID GAS LTD.
ENCHANT	MILK RIVER	5	30/5	3	-	3	1030	3	
	BOW ISLAND	25	25/5	18	1	17	960*	16	GAS SOLD TO TRANS-
	BASAL BLAIRMORE	11	20/10	8	1	7	1040*	7	CANADA PIPE LINES LTD.
	ELLIS	3	25/10	2	-	2	1030	2	
	MISSISSIPPIAN	5	15/10	4	1	3	1040*	3	GAS SOLD TO TRANS- CANADA PIPE LINES LTD.
ERSKINE	VIKING	4	20/5	3	-	3	1040	3	
	BLAIRMORE	20	15/10	15	-	15	1090	16	
	LEDUC ASSOCIATED	31	10/20	22	-	22	1070	24	
	LEDUC SOLUTION	10	35/25	5	-	5	1110	6	
ESTHER	VICTORIA	23	30/5	15	-	15	990	15	GAS SOLD TO TRANS-
	BANFF	12	10/5	10	-	10	1000	10	CANADA PIPE LINES LTD.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
ETZIKOM	BOW ISLAND	79	20/5	60	27	33	930	31	GAS SOLD TO SOUTH ALBERTA PIPE LINES LTD.
	BASAL BLAIRMORE	1	25/5	1	-	1	1010	1	
EXCELSIOR	VIKING	9	15/5	7	-	7	1000	7	
	BASAL BLAIRMORE	39	10/5	33	-	33	970	32	
EYREMORE	BOW ISLAND	15	30/5	10	-	10	960	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
FAIRYDELL-BON ACCORD	VIKING	130	20/5	100	13	87	1020*	89	GAS SOLD TO NORTH-WESTERN UTILITIES. LIMITED.
	BASAL BLAIRMORE	20	20/5	15	-	15	990*	15	
FAUST SOUTH	GETHING	12	10/5	10	-	10	990	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
FENN-BIG VALLEY	VIKING	20	20/5	15	5	10	1000*	11	
	NISKU SOLUTION	150	45/35	53	16	37	1110	41	GAS SOLD TO NORTH-WESTERN UTILITIES
	LEDUC ASSOCIATED AND SOLUTION	11	35/45	4	1	3	1110	3	LIMITED
FIGURE LAKE	VIKING	6	25/5	4	-	4	960	4	PRESENTLY CONSIDERED
	BLAIRMORE	11	15/5	9	-	9	1000	9	BEYOND ECONOMIC REACH.
	NISKU	19	15/5	15	-	15	1000	15	
FLATBUSH	MANNVILLE	13	20/5	10	-	10	1000	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
FOREMOST	BOW ISLAND	33	15/5	27	6	21	950	20	GAS SOLD TO CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
FORT KENT	BLAIRMORE	5	20/5	4	1	3	980	3	SUPPLIES LOCAL UTILITY.
FOX CREEK	VIKING	6	15/5	5	-	5	1160	6	PRESENTLY CONSIDERED
	GETHING	1	25/5	1	-	1	1160	1	BEYOND ECONOMIC REACH.
	TRIASSIC	5	15/10	4	-	4	1160	5	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Fox Creek West	Gething	5	10/5	4	-	4	1020	4	
	Nisku	18	10/20	13	-	13	1150	15	
Garrington	Viking Associated and Non-Associated	130	20/10	90	-	90	1130	102	
	Blairmore	10	15/10	8	-	8	1010	8	
	Mississippian	1	15/10	1	-	1	1020	1	
	Leduc	37	15/20	25	-	25	1020	26	
Ghost Pine	Blairmore	37	10/10	30	-	30	1010	30	Presently considered beyond economic reach.
	Blairmore Associated	8	20/10	6	-	6	1050	6	
	Mississippian	3	15/10	2	-	2	1070	2	
Gilby	Cardium	3	15/10	2	-	2	1000	2	
	Viking	4	20/5	3	-	3	1220	4	
	Viking Solution	14	40/40	5	-	5	1250	6	
	Blairmore	160	10/15	120	6	114	1090*	124	Gas sold to Trans-Canada Pipe Lines Ltd.
	Blairmore Solution	25	40/40	9	-	9	1250	11	
	Jurassic	250	20/10	180	4	176	1090*	192	Gas sold to Trans-Canada Pipe Lines Ltd.
	Jurassic Solution	50	50/40	15	-	15	1100	17	
	Pekisko	420	10/15	320	35	285	1090*	311	Gas sold to Trans-Canada Pipe Lines Ltd.
	Banff	4	20/15	3	-	3	1100	3	
	Wabamun	7	10/20	5	-	5	1170	6	
Glen Park	Basal Blairmore	10	15/5	8	1	7	1140	8	Gas sold to Northwestern Utilities Limited.
	Leduc Solution	17	40/20	8	1	7	1250	9	
Gold Creek	Wabamun	50	15/30	30	-	30	1050	32	Presently considered beyond economic reach.
Golden Spike	Viking	8	20/5	6	1	5	1050	5	Gas injected into Leduc zone.
	Blairmore	22	10/5	19	1	18	1050	19	
	Wabamun	26	10/15	20	9	11	1060	12	
	Nisku Associated	4	15/15	3	-	3	1220	4	
	Nisku Solution	6	35/20	3	1	2	1220	2	Gas injected into Leduc zone.
	Leduc Solution	130	30/30	65	-18	83	1290	107	
Goodwin Lake	Jurassic	20	15/10	15	-	15	1070	16	Presently considered beyond economic reach.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
GOOSE RIVER	VIKING	3	20/5	2	-	2	1000	2	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BEAVERHILL LAKE SOLUTION	110	60/35	30	-	30	1140	34	
GORDONDALE	PADDY	91	50/5	43	22	21	1000	21	GAS SOLD TO WESTCOAST TRANSMISSION COMPANY LIMITED.
	GETHING	37	15/5	30	26	4	1020	4	
	CADOMIN	16	15/5	13	5	8	1050	8	
GREENCOURT	JURASSIC-DETRITAL	65	15/10	50	-	50	1070	54	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	MISSISSIPPIAN ASSOCIATED	37	25/10	25	-	25	1130	28	
HACKETT	BASAL BLAIRMORE	62	10/10	50	-	50	1100	55	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
HAIRY HILL	VIKING	1	25/5	1	-	1	980	1	
	BLAIRMORE	23	10/5	20	7	13	1000*	13	GAS SOLD TO WESTERN MINERALS LTD.
HAMELIN CREEK	CADOTTE	3	20/5	2	-	2	1000	2	
	GETHING	4	15/5	3	-	3	1010	3	
	CADOMIN	21	15/5	17	4	13	1060	14	SUPPLIES LOCAL UTILITY.
HAMILTON LAKE	VIKING ASSOCIATED AND NON-ASSOCIATED	14	25/5	10	-	10	1040	10	
	UPPER MANNVILLE	1	15/5	1	-	1	1040	1	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
HARMATTAN EAST	MISSISSIPPIAN ASSOCIATED	1200	10/15	900	-6	906	1080	978	RESERVOIR BEING CYCLED.
	MISSISSIPPIAN SOLUTION	180	25/25	100	6	94	1280	120	GAS INJECTED INTO GAS CAP.
HARMATTAN ELKTON	MISSISSIPPIAN	55	15/15	40	-	40	1040	42	
	MISSISSIPPIAN ASSOCIATED	1200	10/15	900	-14	914	1080	987	RESERVOIR BEING CYCLED.
	MISSISSIPPIAN SOLUTION	170	25/30	90	14	76	1280	97	GAS INJECTED INTO GAS CAP.
	LEDUC	83	10/60	30	-	30	1100	33	
HEART RIVER	CADOTTE	2	15/5	2	-	2	1000	2	SUPPLIES LOCAL UTILITY.
	NOTIKEWIN	2	10/5	2	-	2	1000	2	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
HERCULES	VIKING	19	15/5	15	-	15	1050	16	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	29	10/5	25	-	25	960	24	
HOLBORNE	CARDIUM	6	25/5	4	-	4	980	4	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	25	20/10	18	-	18	1120	20	
HOLMBERG	BLAIRMORE	25	15/5	20	-	20	1050	21	GAS SOLD TO BAROID OF CANADA, LTD. PLANT.
HOMEGLEN-RIMBEY	LEDUC ASSOCIATED	1000	10/15	800	120	680	1070*	728	GAS SOLD TO TRANS-CANADA PIPE LINES LTD. AND ALBERTA & SOUTHERN GAS CO. LTD.
HUNTER VALLEY	MISSISSIPPIAN	78	15/25	50	-	50	1080	54	
HUSSAR	BELLY RIVER	3	25/5	2	-	2	1000	2	
	VIKING	66	20/5	50	2	48	1020*	49	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
	BASAL COLORADO	56	25/5	40	7	33	1020*	34	
	BLAIRMORE	540	15/5	440	60	380	1050*	399	
HUTTON	VIKING ASSOCIATED AND NON-ASSOCIATED	25	25/5	18	-	18	1000	18	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	14	25/5	10	-	10	1000	10	PREVIOUSLY INCLUDED IN CONTROL AREA.
INLAND	VIKING	21	25/5	15	-	15	980	15	
INNISFAIL	MISSISSIPPIAN	22	10/10	18	-	18	1080	19	
	WABAMUN	4	15/15	3	-	3	1170	4	
	LEDUC ASSOCIATED	17	10/35	10	-	10	1020	10	
	LEDUC SOLUTION	200	45/45	60	12	48	1130*	54	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
JARVIE	VIKING	9	20/5	7	-	7	1040	7	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	7	10/5	6	-	6	1100	7	
JENNER	BOW ISLAND	4	25/5	3	-	3	990	3	
	BASAL COLORADO	6	10/5	5	-	5	1040	5	
	BLAIRMORE	14	15/5	11	-	11	1050	12	
	DETRITAL	1	15/5	1	-	1	1000	1	
	MISSISSIPPIAN	2	15/5	2	-	2	1000	2	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
JOARCAM	VIKING ASSOCIATED	66	20/5	50	-	50	1040	52	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
JOFFRE	VIKING	1	25/5	1	-	1	1000	1	
	BASAL BLAIRMORE	33	20/5	25	-	25	1020	26	PRESENTLY CONSIDERED
	NISKU SOLUTION	100	40/40	36	-	36	1260	45	BEYOND ECONOMIC REACH.
	LEDUC	3	15/10	2	-	2	1050	2	
JUDY CREEK	VIKING	13	20/5	10	-	10	1020	10	
	BEAVERHILL LAKE SOLUTION	820	55/35	240	5	235	1080	254	GAS SOLD TO NORTH-WESTERN UTILITIES LIMITED.
JUDY CREEK SOUTH	MISSISSIPPIAN	12	10/10	10	-	10	1050	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH. FORMERLY CARSON LAKE AREA.
JUMPING POUND	MISSISSIPPIAN	780	15/17	550	190	360	1050	378	GAS SOLD TO CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
JUMPING POUND WEST	MISSISSIPPIAN	1100	20/20	700	-	700	1050	735	
KAYBOB	NOTIKEWIN	310	15/5	250	25	225	1100*	248	GAS SOLD TO ALBERTA &
	SPIRIT RIVER	7	15/5	6	-	6	1000	6	SOUTHERN GAS CO. LTD.
	GETHING	15	15/5	12	-	12	1050	13	
	CADOMIN	120	15/5	100	-	100	1040	104	
	WINTERBURN	5	15/35	3	-	3	1070	3	
	BEAVERHILL LAKE ASSOCIATED	4	20/15	3	-	3	1070	3	
	BEAVERHILL LAKE SOLUTION	300	55/25	100	3	97	1140	111	GAS SOLD TO ALBERTA & SOUTHERN GAS CO. LTD.
KAYBOB SOUTH	VIKING	26	20/5	20	-	20	1100	22	
	CADOMIN	74	15/5	60	-	60	1040	62	
	TRIASSIC	4	20/5	3	-	3	1160	3	
	TRIASSIC SOLUTION	95	30/25	50	-	50	1160	58	
	NISKU	1	20/5	1	-	1	1240	1	
	BEAVERHILL LAKE	24	10/30	15	-	15	1210	18	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
KESSLER	VIKING	70	25/5	50	4	46	1020*	47	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
	MANNVILLE	5	10/5	4	-	4	990	4	
KILLAM	VIKING	4	25/5	3	-	3	1040	3	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	9	15/5	7	-	7	1000	7	
KIRKALDY	BASAL MANNVILLE	20	20/5	15	-	15	1000	15	
	MISSISSIPPIAN	39	15/10	30	-	30	1010	30	
KNAPPEN	SUNBURST-ELLIS	14	20/5	11	-	11	1000	11	GAS SOLD TO CANADIAN MONTANA GAS COMPANY LTD. PREVIOUSLY INCLUDED IN ADEN AREA.
	MISSISSIPPIAN	7	10/10	6	-	6	1000	6	
KNELLER	BLAIRMORE	12	10/5	10	-	10	1100	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
LAC LA BICHE	VIKING	14	25/5	10	-	10	1010	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH. SUPPLIES LOCAL UTILITY.
	BLAIRMORE	20	20/5	15	-	15	1010	15	
LAMBERT CREEK	WABAMUN	15	25/10	10	-	10	1050	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
LEAFLAND	BLAIRMORE	15	20/10	11	-	11	1000	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	MISSISSIPPIAN	3	20/5	2	-	2	1000	2	
LEAHURST	BLAIRMORE	9	10/5	8	1	7	1160*	8	SUPPLIES LOCAL UTILITY.
LEDUC-WOODBEND	VIKING	20	20/5	15	3	12	1070	13	INJECTED INTO NISKU AND LEDUC GAS CAPS.
	BASAL BLAIRMORE	85	20/5	65	16	49	1180	58	
	NISKU ASSOCIATED	37	10/15	28	-5	33	1180	39	
	NISKU SOLUTION	140	25/30	72	61	11	1180	13	GAS SOLD TO NORTH-WESTERN UTILITIES, LIMITED.
	LEDUC ASSOCIATED	420	15/15	300	-15	315	1180	372	
	LEDUC SOLUTION	170	40/30	70	64	6	1180	7	
LINDBERGH	VIKING	3	35/5	2	-	2	990*	2	
	BLAIRMORE	18	20/5	14	5	9	1000*	9	SUPPLIES SALT PLANT.
LLOYDMINSTER	BLAIRMORE	40	50/30	14	12	2	950	2	SUPPLIES LOCAL UTILITY.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Lone Pine Creek	Basal Blairmore	4	10/10	3	-	3	1020	3	
	Wabamun	160	20/20	100	-	100	1030	103	
	Leduc	3	15/20	2	-	2	1050	2	
Long Coulee	Mannville	12	15/5	10	-	10	1000	10	Presently considered beyond economic reach.
Lookout Butte	Mississippian	550	15/5	400	-	400	1040	416	Reservoir being cycled.
Lovett River	Blairmore	12	10/5	10	-	10	1040	10	Presently considered
	Mississippian	86	10/10	70	-	70	1040	73	beyond economic reach.
Majeau Lake	Blairmore	3	20/5	2	-	2	1000	2	Presently considered
	Mississippian	12	10/10	10	-	10	1070	11	beyond economic reach.
Manyberries	Bow Island	42	20/5	32	18	14	940	13	Gas sold to Canadian Montana Gas Company Ltd.
Marsh Head Creek	Leduc	27	15/35	15	-	15	1050	16	Presently considered beyond economic reach.
Marten Hills	Pelican	2	35/5	1	-	1	990	1	
	Grand Rapids	5	35/5	3	-	3	990	3	
	Wabiskaw	680	30/5	450	-	450	990	446	
	Wabamun	300	30/5	200	-	200	1000	200	
Mazeppa	Mississippian	20	10/15	15	-	15	1060	16	Presently considered beyond economic reach.
Medicine Hat	Medicine Hat	2300	20/5	1750	320	1430	970*	1387	Gas sold to Trans-Canada Pipe Lines Ltd., Many Islands Pipe Lines Limited and supplies local utility.
	Bow Island	20	20/5	15	1	14	970	14	
	Ellis	25	15/5	20	-	20	1000	20	
Medicine River	Blairmore Associated and Non-Associated	110	20/5	85	-	85	1150	98	Includes area previously called Hespero.
	Blairmore Solution	18	40/45	6	-	6	1250	8	
	Detrital	3	15/10	2	-	2	1000	2	
	Jurassic Associated and Non-Associated	46	20/5	35	-	35	1020	36	
	Jurassic Solution	52	65/45	10	-	10	1100	11	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
MEDICINE RIVER (CONTINUED)	MISSISSIPPIAN ASSOCIATED AND NON-ASSOCIATED	13	20/5	10	-	10	1100	11	
	MISSISSIPPIAN SOLUTION	9	40/45	3	-	3	1200	4	
	LEDUC ASSOCIATED	6	10/20	4	-	4	1000	4	
MILLET	BLAIRMORE	21	20/10	15	-	15	1020	15	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
MINNEHIK-BUCK LAKE	BLAIRMORE	6	25/5	4	-	4	1000	4	
	MISSISSIPPIAN	550	15/10	420	36	384	1130*	434	GAS SOLD TO ALBERTA & SOUTHERN GAS CO. LTD.
MITSUE	GILWOOD SOLUTION	170	45/25	70	-	70	1170	82	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
MOOSE MOUNTAIN	MISSISSIPPIAN	75	20/25	45	-	45	1000	45	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
MORINVILLE	VIKING	3	25/5	2	-	2	1000	2	
	BLAIRMORE	140	15/5	110	37	73	1070	78	GAS SOLD TO CANADIAN INDUSTRIAL GAS LIMITED AND SUPPLIES LOCAL UTILITY.
MOUNTAIN PARK	TRIASSIC	29	10/5	25	-	25	1090	27	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
NEVIS	BLAIRMORE	65	15/10	50	-	50	1000	50	
	DEVONIAN	880	15/20	600	83	517	1000*	517	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
NORDEGG	TRIASSIC	9	10/10	7	-	7	1000	7	PRESENTLY CONSIDERED
	MISSISSIPPIAN	25	10/10	20	-	20	1000	20	BEYOND ECONOMIC REACH.
NORMANDVILLE	GETHING	15	15/5	12	-	12	980	12	
	TRIASSIC	4	15/5	3	-	3	1090	3	
	MISSISSIPPIAN	31	15/5	25	1	24	1050	25	SUPPLIES LOCAL UTILITY.
NORTH-WEST PINE	LEDUC	180	15/35	100	-	100	1050	105	
OBED	MISSISSIPPIAN	12	10/10	10	-	10	1040	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
OBERLIN	BLAIRMORE	3	20/5	2	1	1	1090*	1	SUPPLIES LOCAL UTILITY.
OKOTOKS	WABAMUN	420	10/60	150	26	124	1000	124	GAS SOLD TO CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
OLDS	WABAMUN	370	15/20	250	-	250	1050	263	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
OYEN	VIKING	43	15/5	35	4	31	980*	30	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
	DETRITAL	11	15/5	9	-	9	1010*	9	
PADDLE RIVER	JURASSIC	190	25/10	130	-	130	1070	139	
	MISSISSIPPIAN	30	25/10	20	-	20	1060	21	
PAKOWKI LAKE	BOW ISLAND	14	25/5	10	4	6	940	6	GAS SOLD TO CANADIAN MONTANA GAS COMPANY LIMITED.
PARFLESH	VIKING	3	20/5	2	-	2	1000	2	
	MANNVILLE	10	15/5	8	-	8	1000	8	
PARKLAND NORTH-EAST	MISSISSIPPIAN	21	15/15	15	-	15	1010	15	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
PEMBINA	BELLY RIVER ASSOCIATED AND NON-ASSOCIATED	79	20/5	60	-	60	1180	71	
	BELLY RIVER SOLUTION	63	55/65	10	1	9	1180	11	GAS SOLD TO NORTH-WESTERN UTILITIES LIMITED.
	CARDIUM SOLUTION	3300	55/40	890	130	760	1170	889	
	VIKING	11	20/5	8	-	8	1100	9	
	BLAIRMORE	240	15/10	180	12	168	1120	188	GAS SOLD TO ALBERTA & SOUTHERN GAS CO. LTD.
	JURASSIC	19	15/5	15	-	15	1050	16	
	MISSISSIPPIAN	14	15/15	10	-	10	1050	11	
PENDANT D'OREILLE	BOW ISLAND	180	20/5	140	78	62	940	58	GAS SOLD TO CANADIAN MONTANA GAS COMPANY LTD.
	MANNVILLE	25	15/5	20	7	13	1000	13	
PENHOLD	VIKING	14	10/5	12	-	12	1020	12	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
PHIL CAN	GETHING	12	20/5	9	-	9	980	9	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	MISSISSIPPIAN	5	15/5	4	-	4	1050	4	
PINCHER CREEK	MISSISSIPPIAN	1100	35/25	540	190	350	1020*	357	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
PINE CREEK	WABAMUN	190	10/50	85	-	85	1050*	89	GAS USED TO MAINTAIN PRESSURE IN WINDFALL FIELD. INCLUDES AREA PREVIOUSLY CALLED BEAVER CREEK.
	LEDUC	780	25/35	380	75	305	1050*	320	
PLAIN LAKE	VIKING	3	25/5	2	-	2	980	2	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	28	20/5	21	-	21	1000	21	
PLOVER LAKE	VIKING	19	15/5	15	-	15	1000	15	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
POUCE COUPE	PEACE RIVER	180	35/5	110	66	44	1000	44	GAS SOLD TO WESTCOAST TRANSMISSION COMPANY LIMITED.
	CADOMIN	4	15/5	3	-	3	1060	3	
POUCE COUPE SOUTH	DOE CREEK	4	40/5	2	1	1	1000	1	GAS SOLD TO WESTCOAST TRANSMISSION COMPANY LIMITED AND PEACE RIVER TRANSMISSION CO. LTD.
	PEACE RIVER	90	30/5	60	42	18	1040	19	
	GETHING	16	20/5	12	8	4	1000	4	
	CADOMIN	3	20/5	2	2	0	1000	0	
	TRIASSIC	17	20/5	13	-	13	1000	13	
PREVO	MISSISSIPPIAN	37	10/10	30	3	27	1110*	30	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
PRINCESS	SECOND WHITE SPECKS	60	30/5	40	1	39	970*	38	
	BOW ISLAND	1	25/5	1	-	1	1010	1	
	BASAL COLORADO	18	20/5	14	-	14	1020*	14	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
	BASAL MANNVILLE	99	15/5	80	16	64	1020*	65	
	JEFFERSON	31	15/5	25	-	25	1030*	26	
PROVOST	VIKING	710	20/5	540	135	405	1030*	417	GAS SOLD TO TRANS-CANADA PIPE LINES LTD. AND SUPPLIES LOCAL UTILITY.
	BLAIRMORE	19	15/5	15	-	15	1000	15	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Redland	Viking	3	20/5	2	-	2	1000	2	
	Blairmore	20	20/5	15	-	15	1050	16	
Redwater	Viking	14	25/5	10	-	10	1040	10	Supplies local utility.
	Leduc Solution	200	40/65	42	8	34	1220	41	Gas sold to Canadian Industrial Gas & Oil Ltd.
Red Willow	Viking	13	20/5	10	-	10	1020	10	Presently considered
	Basal Blairmore	8	20/10	6	-	6	1100	7	beyond economic reach.
Retlaw	Bow Island	3	25/5	2	-	2	950	2	
	Basal Colorado	7	25/5	5	-	5	1020	2	
	Basal Blairmore	56	20/10	40	-	40	1000	40	
Rich	Basal Blairmore	16	15/10	12	-	12	1100	13	
Richdale	Viking	14	25/5	10	-	10	1010	10	Presently considered
	Basal Blairmore	11	25/5	8	-	8	1050	8	beyond economic reach.
Rochester	Viking	5	20/5	4	-	4	1000	4	Presently considered
	Blairmore	27	25/5	19	-	19	1000	19	beyond economic reach.
	Wabamun	6	10/5	5	-	5	1070	5	
Rolling Hills	Bow Island	19	15/5	15	-	15	970	15	Presently considered
	Basal Colorado	12	15/5	10	-	10	1030	10	beyond economic reach.
Rowley	Viking	29	10/5	25	-	25	1040	26	
	Mannville	12	10/5	10	-	10	1050	11	Presently considered
	Mississippian Associated and Non-Associated	49	10/10	40	-	40	1080	43	beyond economic reach.
Rycroft	Gething	16	15/5	13	3	10	1040	10	Supplies local utility.
St. Albert-Big Lake	Viking	3	20/5	2	-	2	1070*	2	
	Blairmore	150	15/5	120	50	70	1070*	75	Gas sold to Canadian Industrial Gas Limited.
St. Brides	Blairmore	26	20/5	20	-	20	940	19	Presently considered beyond economic reach.
St. Paul	Blairmore	5	20/5	4	3	1	1000*	1	Supplies local utility.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Saddle Hills	Peace River	48	30/5	32	-	32	1020	33	
	Gething	3	20/5	2	-	2	980	2	
	Permo-Penn	20	20/5	15	-	15	1030	15	
Samson	Basal Blairmore Associated and Solution	17	25/5	12	4	8	1040	8	Gas sold to Northwestern Utilities Limited.
Sarcee	Mississippian	210	15/15	150	16	134	1050	141	Gas sold to Canadian Western Natural Gas Company Limited.
Savanna Creek	Mississippian	590	10/25	400	15	385	1020	393	Gas sold to Westcoast Transmission Company Limited.
Sedalia	Viking	130	20/5	100	3	97	1010*	98	Gas sold to Trans-Canada Pipe Lines Ltd.
	Blairmore	1	25/5	1	-	1	1010	1	
Sibbald	Viking	59	20/5	45	7	38	960*	36	Gas sold to Trans-Canada Pipe Lines Ltd.
	Basal Colorado	13	20/5	10	-	10	970	10	
Simonette	Cadomin	20	15/10	15	-	15	1060	16	Presently considered beyond economic reach.
	Wabamun	140	10/35	80	-	80	1070	86	
	Leduc Solution	230	45/45	70	-	70	1020	71	
Smith Coulee	Bow Island	49	25/5	35	15	20	930	19	Gas sold to Canadian Montana Gas Company Limited.
Smoky River	Wabamun	42	15/30	25	-	25	1050	26	Presently considered beyond economic reach.
Standard	Viking	26	20/5	20	-	20	1000	20	
Steen River	Slave Point	13	10/15	10	-	10	1070	11	Presently considered beyond economic reach.
Steep Creek	Gething	6	15/5	5	-	5	1020	5	Presently considered beyond economic reach.
	Triassic	7	15/10	5	-	5	1030	5	
	Permo-Penn	12	10/10	10	-	10	1030	10	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
STETTLER	VIKING	4	25/5	3	-	3	1020	3	GAS USED FOR COMPRESSOR FUEL.
	NISKU SOLUTION	26	45/45	8	2	6	1130	7	
	LEDUC SOLUTION	10	45/45	3	1	2	1140	2	GAS SOLD TO NORTHWESTERN UTILITIES LIMITED.
STOLBERG	MISSISSIPPIAN	86	10/10	70	-	70	1040	73	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
STRATHMORE	BELLY RIVER	7	20/5	5	-	5	1000	5	GAS SOLD TO CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
	VIKING	7	20/5	5	-	5	1000	5	
STURGEON LAKE	GETHING	12	15/5	10	-	10	1000	10	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
STURGEON LAKE	GETHING	16	15/5	13	-	13	1000	13	
SOUTH	CADOMIN	6	15/5	5	-	5	1060	5	
	TRIASSIC ASSOCIATED	5	10/5	4	-	4	1180	5	
	TRIASSIC SOLUTION	20	35/70	4	-	4	1180	5	
	WABAMUN	7	10/25	5	-	5	1070	5	
	LEDUC ASSOCIATED	7	10/25	5	-	5	1080	5	
	LEDUC SOLUTION	260	45/45	80	8	72	1080	78	GAS SOLD TO CANADIAN UTILITIES LIMITED.
STURGEON LAKE SOUTH GENERAL AREA	GETHING	80	15/5	65	-	65	1000	65	
	CADOMIN	31	15/5	25	-	25	1060	27	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	TRIASSIC	6	15/5	5	-	5	1180	6	
	PERMO-PENN	3	20/5	2	-	2	1030	2	
SUFFIELD	MILK RIVER	32	25/5	23	4	19	960	18	SUPPLIES LOCAL UTILITY.
SUNDRE	VIKING	6	20/10	4	-	4	1020	4	
	BLAIRMORE	8	15/10	6	-	6	1020	6	
	ELKTON ASSOCIATED	21	15/15	15	-3	18	1070	19	
	ELKTON SOLUTION	64	40/35	25	3	22	1100	24	GAS INJECTED INTO GAS CAP.
SWALWELL	MISSISSIPPIAN	12	10/10	10	-	10	1100	11	
SWAN HILLS	GETHING	1	10/5	1	-	1	1050	1	
	BEAVERHILL LAKE SOLUTION	1700	60/40	400	6	394	1120	441	GAS SOLD TO NORTHWESTERN UTILITIES LIMITED.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
SYLVAN LAKE	BLAIRMORE	330	20/10	240	-	240	1100	264	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
	DETRITAL	8	20/10	6	-	6	1100	7	
	JURRASIC ASSOCIATED AND NON-ASSOCIATED	62	20/10	45	-	45	1020	46	
	JURASSIC SOLUTION	12	40/45	4	-	4	1100	4	
	MISSISSIPPIAN	100	20/10	75	-	75	1100	73	
	MISSISSIPPIAN SOLUTION	42	40/40	15	-	15	1200	18	
	LEDUC ASSOCIATED	35	20/10	25	-	25	1020	26	
	LEDUC SOLUTION	14	35/45	5	-	5	1100	6	
TANGENT	CADOTTE	14	30/5	9	-	9	1010	9	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	GETHING	79	20/5	60	-	60	1000	60	
	TRIASSIC	53	20/5	40	-	40	1180	47	
THREE HILLS	VIKING	3	15/5	2	-	2	1000	2	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH. INCLUDES AREA PREVIOUSLY CALLED MT. VERNON.
	BLAIRMORE	7	20/5	5	-	5	1000	5	
	MISSISSIPPIAN	4	20/10	3	-	3	1000	3	
THREE HILLS CREEK	BELLY RIVER	9	15/5	7	-	7	970	7	
	VIKING	8	20/5	6	-	6	1000	6	
	MISSISSIPPIAN	210	10/10	170	8	162	1110 *	180	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
	LEDUC	10	20/15	7	-	7	1100	8	
TURIN	BOW ISLAND	11	20/5	8	-	8	970	8	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BASAL BLAIRMORE	21	10/5	18	-	18	1020	18	
	ELLIS	5	15/5	4	-	4	1070	4	
	MISSISSIPPIAN	3	15/10	2	-	2	1050	2	
TURNER VALLEY	MISSISSIPPIAN ASSOCIATED	1500	10/70	410	270	140	1110	155	GAS SOLD TO CANADIAN WESTERN NATURAL GAS COMPANY LIMITED AND SUPPLIES LOCAL UTILITY.
	MISSISSIPPIAN SOLUTION	1400	45/55	350	270	80	1110	89	
TWINING	BASAL MANNVILLE	1	20/5	1	-	1	1120	1	
	MISSISSIPPIAN	16	20/5	12	-	12	1100	13	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	MISSISSIPPIAN SOLUTION	15	40/35	6	-	6	1100	7	

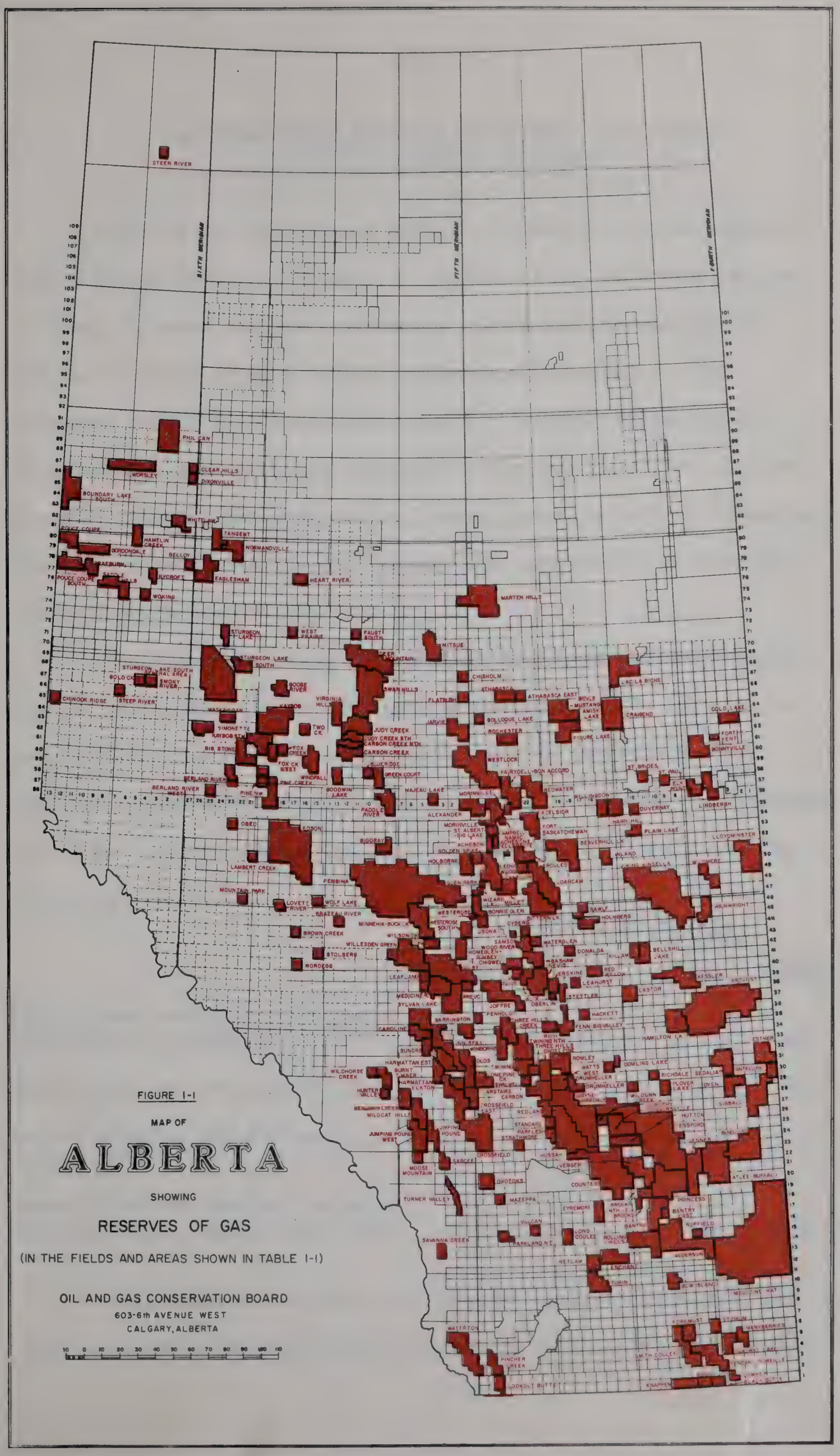
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
TWINING NORTH	MANNVILLE	7	20/5	5	-	5	1100	6	
	MISSISSIPPIAN ASSOCIATED	40	20/5	30	-	30	1110	33	
	MISSISSIPPIAN SOLUTION	16	40/15	8	-	8	1110	9	
TWO CREEK	TRIASSIC	12	10/5	10	-	10	1090	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
USONA	BLAIRMORE	12	10/5	10	-	10	1110	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
VERGER	BOW ISLAND	3	25/5	2	-	2	1100	2	
	BASAL COLORADO	7	25/5	5	-	5	1060	5	
	BASAL MANNVILLE	74	15/5	60	-	60	1050	63	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
	MISSISSIPPIAN	3	15/10	2	-	2	1070	2	
VIKING-KINSELLA	VIKING	1100	25/5	770	380	390	1000*	390	GAS SOLD TO NORTH-WESTERN UTILITIES LIMITED. SUPPLIES LOCAL UTILITY.
	BLAIRMORE	33	20/5	25	11	14	1000	14	
	DEVONIAN	16	20/5	12	4	8	990*	8	
VIRGINIA HILLS	BLAIRMORE	9	10/5	8	-	8	1040	8	
	PERMIAN	20	15/10	15	-	15	1160	17	
	BEAVERHILL LAKE SOLUTION	220	60/60	35	1	34	1120	38	GAS SOLD TO NORTH-WESTERN UTILITIES LIMITED.
	SLAVE POINT	3	25/20	2	-	2	1070	2	
WAINWRIGHT	VIKING	5	15/5	4	-	4	980	4	
	BLAIRMORE ASSOCIATED AND NON-ASSOCIATED	33	20/30	18	-	18	940	17	
WASKAHIGAN	DUNVEGAN	25	10/10	20	-	20	1100	22	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
WATERGLEN	BLAIRMORE	7	15/10	5	-	5	1100	6	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	LEDUC	9	15/20	6	-	6	1100	7	
WATERTON	MISSISSIPPIAN	2200	15/40	1130	59	1071	1040*	1114	GAS SOLD TO ALBERTA & SOUTHERN GAS CO. LTD.
	DEVONIAN	230	20/30	130	4	126	1020	129	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
WATTS	VIKING	3	20/5	2	1	1	1030*	1	SUPPLIES LOCAL UTILITY.
	MISSISSIPPIAN	1	20/5	1	-	1	1070	1	
WAYNE-ROSEDALE	BELLY RIVER	7	20/5	5	-	5	1000	5	GAS SOLD TO TRANS-CANADA PIPE LINES LTD., CANADIAN WESTERN NATURAL GAS COMPANY LIMITED AND SUPPLIES LOCAL UTILITY.
	VIKING	200	15/5	160	9	151	1090*	165	
	BLAIRMORE	260	15/5	210	16	194	1120*	217	
WEST DRUMHELLER	BASAL BLAIRMORE	12	15/5	10	-	10	1100	11	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	NISKU ASSOCIATED	9	10/15	7	-	7	1090	8	
WESTEROSE	BLAIRMORE	7	20/5	5	-	5	1020	5	
	LEDUC ASSOCIATED	130	10/20	90	-8	98	1070	105	
	LEDUC SOLUTION	140	35/15	75	8	67	1100	74	GAS INJECTED INTO GAS CAP.
WESTEROSE SOUTH	WABAMUN	7	10/10	6	-	6	1090	7	
	LEDUC	1700	10/15	1300	180	1120	1070*	1198	GAS SOLD TO TRANS-CANADA PIPE LINES LTD. AND ALBERTA & SOUTHERN GAS CO. LTD.
WESTLOCK	VIKING	310	15/5	250	13	237	1060*	251	GAS SOLD TO CANADIAN INDUSTRIAL GAS LIMITED AND SUPPLIES LOCAL UTILITY.
	BASAL BLAIRMORE	4	20/5	3	-	3	1100	3	
WEST PRAIRIE	CADOTTE	18	10/5	15	-	15	1040	16	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLUESKY	6	10/5	5	-	5	990	5	
WHITELAW	GETHING	31	15/5	25	4	21	1020	21	SUPPLIES LOCAL UTILITY.
	TRIASSIC	33	20/5	25	-	25	1090	27	
WILDCAT HILLS	MISSISSIPPIAN	810	15/20	550	43	507	1050*	532	GAS SOLD TO ALBERTA & SOUTHERN GAS CO. LTD.
WILDHORSE CREEK	MISSISSIPPIAN	150	15/20	100	-	100	940	94	
WILDMERE	BLAIRMORE	22	20/5	17	8	9	960*	9	SUPPLIES LOCAL UTILITY.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
WILDUNN CREEK	VIKING	35	25/5	25	1	24	1010	24	GAS SOLD TO TRANS-CANADA PIPE LINES LTD.
WILLESDEN GREEN	BELLY RIVER	4	20/5	3	-	3	1000	3	
	CARDIUM	12	20/5	9	-	9	1100	10	
	CARDIUM SOLUTION	250	75/35	40	-	40	1100	44	
	BASAL BLAIRMORE	20	10/15	15	-	15	1100	17	
WILLINGDON	VIKING	3	25/5	2	-	2	980	2	GAS SOLD TO WESTERN MINERALS LTD. AND SUPPLIES LOCAL UTILITY.
	MANNVILLE	15	25/5	11	1	10	990	10	
	LEDUC	11	10/5	9	5	4	1000*	4	
WILSON CREEK	PEKISKO	23	10/5	20	-	20	1090	22	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BANFF	18	10/5	15	-	15	1080	16	
WIMBORNE	VIKING	1	25/5	1	-	1	1020	1	
	MISSISSIPPIAN	1	10/10	1	-	1	1100	1	
	NISKU	3	20/15	2	-	2	1160	2	
	NISKU SOLUTION	5	30/45	2	-	2	1160	2	
	LEDUC ASSOCIATED	320	10/30	200	-	200	1000	200	
	LEDUC SOLUTION	91	50/45	25	-	25	1000	25	
WINDFALL	VIKING	13	25/5	9	-	9	1030	9	
	MISSISSIPPIAN	5	15/5	4	-	4	1040	4	
	LEDUC	820	10/35	480	19	461	1080*	499	RESERVOIR BEING CYCLED, GAS SOLD TO ALBERTA & SOUTHERN GAS CO. LTD. PRESSURE MAINTAINED BY PINE CREEK GAS.
WIZARD LAKE	VIKING	1	15/10	1	-	1	1070	1	GAS SOLD TO NORTH-WESTERN UTILITIES LIMITED.
	BLAIRMORE	14	20/10	10	9	1	1120	1	
	LEDUC SOLUTION	220	40/25	100	14	86	1250	108	
WOKING	PEACE RIVER	5	10/5	4	-	4	1040	4	
	SPIRIT RIVER	3	20/5	2	-	2	1040	2	
	BLUESKY	4	20/5	3	-	3	1040	3	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	PERMO-PENN	3	20/5	2	-	2	1060	2	
	MISSISSIPPIAN	3	25/5	2	-	2	1070	2	
WOLF LAKE	CADOMIN	13	10/5	11	-	11	1060	12	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FIELD OR AREA	ZONE	INITIAL GAS IN PLACE BCF	LOSSES RESERVOIR/SURFACE PER CENT	INITIAL MARKETABLE GAS BCF	MARKETABLE GAS PRODUCED TO DEC. 31, 1964 BCF	REMAINING MARKETABLE GAS DEC. 31, 1964 BCF	ESTIMATED HEATING VALUE BTU/CU.FT.	REMAINING MARKETABLE GAS (1000 BTU BASIS) BCF	REMARKS
Wood River	Basal Blairmore	37	10/10	30	4	26	1090*	28	Gas sold to Trans-Canada Pipe Lines Ltd.
Worsley	Leduc	270	15/5	220	29	191	1070	204	Gas sold to Westcoast Transmission Company Limited and supplies local utility.
Within Economic Reach				36072	4509	31563		33530	
Beyond Economic Reach				2772		2772		2900	
Other Reserves	(Within Economic Reach)			74		74		79	
Less Than 10 Bcf	(Beyond Economic Reach)			858		858		909	
TOTAL RESERVES, DECEMBER 31, 1964				39776	4509	35267		37418	

*Measured Higher Heating Value.


STEEN RIVER
SIXTH MERIDIAN
FIFTH MERIDIAN
FOURTH MERIDIAN
PHIL CAN
WORSLEY
CLEAR HILLS
DIXONVILLE
BOUNDARY LAKE SOUTH
WHITELAW
POUCE COUPE
TANGENT
HAMELIN CREEK
NORMANDVILLE
GORDONDALE
BELLOY
GRAEBURN
POUCE COUPE SOUTH
SADDLE HILLS
RYCROFT
EAGLESHAM
HEART RIVER
WOKING
MARTEN HILLS
STURGEON LAKE
WEST PRAIRIE
FAUST SOUTH
MITSUE
STURGEON LAKE SOUTH
GOLD CK
SMOKY RIVER
GENERAL AREA
CHINOOK RIDGE
STEEP RIVER
GOOSE RIVER
VIRGINIA HILLS
WASKAHIGAN
SIMONETTE
TWO CK
JUDY CREEK
JUDY CREEK 9TH
CARBON CREEK NTH
CARBON CREEK
BIG STONE
FOX CREEK
FOX CK
WINDFALL
PINE CREEK
BERLAND RIVER
BERLAND RIVER WEST
PINE NW
WOODWIN LAKE
PADDLE RIVER
BLUERIDGE
GREEN COURT
MAJEAU LAKE
CHISHOLM
SWAN HILLS
FLATBUSH
ATHABASCA
ATHABASCA EAST
BOYLE - MUSTANG - ANISK LAKE
LAC LA BICHE
COLD LAKE
CRAIGEND
GOLLOQUE LAKE
JARVIE
ROCHESTER
FIGURE LAKE
FORT KENT
BONNYVILLE
WESTLOCK
FAIRYDELL-BON ACCORD
ST BRIDES
ST PAUL
REDWATER
LINDBERGH
DUVERNAY
ALEXANDER
MORINVILLE
ST ALBERT - BIG LAKE
FORT SASKATCHEWAN
PLAIN LAKE
LLOYDMINSTER
OBED
EDSON
BIGGRAY
ACHESON
GOLDEN SPIKE
HOLBORNE
BEAVERHILL LK
WLAND
WAINWRIGHT
LAMBERT CREEK
PENBINA
MOUNTAIN PARK
LOVETT RIVER
WOLF LAKE
GRAZEAU RIVER
WIZARD LK
MILLET
BONNIE GLEN
WESTEROSE
WESTEROSE SOUTH
MINNEHIK-BUCK
BROWN CREEK
WILLESDEN GREEN
STOLBERG
NORDEGG
USONA
SAMSON
WOOD RIVER
HOMEGLEN-RIMBEY-CHOWEL
WATERGLEN
DONALDA
BELLSHILL LAKE
KILLAM
BASHAW
ERSKINE
RED WILLOW
LEAHURST
CASTOR
PROVOST
ESTHER
MEDICINE R
SYLVAN LAKE
PREVOST
JOFFRE
OBERLIN
PENHOLD
HACKETT
FENN BIG VALLEY
CAROLINE
HAMILTON LK
THREE HILLS CREEK
TWINING NTH
THREE HILLS
GHOST PINE
SUNDRE
HARMATTAN EST
BURNT RIVER
HARMATTAN
ELKTON
ROWLEY
WATTS
WEST DRUMHELLER
DRUMHELLER
DOWLING LAKE
RICHDALE
SEDALIA
PLOVER LAKE
OYEN
WILDHORSE CREEK
HUNTER VALLEY
WILDCAT HILLS
ARSTAIRS
CARBON
CROSSFIELD EAST
REDLAND
WILD DUNN CREEK
SIBBALD
HUTTON
ESSFORD
STANDARD
PARFLESH
STRATHMORE
JUMPING POUND
JUMPING POUND WEST
CROSSFIELD
HUSSAR
VERGER
SARCEE
MOOSE MOUNTAIN
OKOTOKS
COUNTESS
ATLEE BUFFALO
TURNER VALLEY
MAZEPPA
CYREMORE
ARGYLL NTH-E BROOKS
PRINCESS
BANTRY EAST
BANTRY
SUFFIELD
VULCAN
LONG COULEE
ROLLING HILLS
SAVANNA CREEK
PARKLAND NE
RETLAW
ENCHANT
TURIN
ANDERSON
BOW ISLAND
MEDICINE HAT
FOREMOST
ETZIKOM
WAYNESBERRIES
WATERTON
SMITH COULEE
PINCHER CREEK
KNAPPEN
OKOTOK BUTTE
FIGURE 1-1
MAP OF
ALBERTA
SHOWING
RESERVES OF GAS
(IN THE FIELDS AND AREAS SHOWN IN TABLE 1-1)
OIL AND GAS CONSERVATION BOARD
603-6th AVENUE WEST
CALGARY, ALBERTA
10 0 10 20 30 40 50 60 70 80 90 100 110

II. THE ESTABLISHED RESERVES OF NATURAL GAS LIQUIDS IN THE PROVINCE OF ALBERTA

Natural gas liquids are defined in The Oil and Gas Conservation Act as "propane, butanes or pentanes plus, or a combination of them, obtained from the processing of raw gas or condensate". For the purposes of this report, condensate recovered in stock tanks and marketed without processing is included in the reserves of pentanes plus, and hence natural gas liquids. Also included in the pentanes plus category are high vapor pressure products containing substantial quantities of butanes that are recovered at several plants throughout the Province.

The Board estimates the established recoverable reserves of natural gas liquids in the Province as of December 31, 1964, to be some 1090 million barrels. This represents an increase of about 185 million barrels since December 31, 1963. Details of the reserves and of the changes during the last year are given in the following tabulation:

	Millions of Barrels			
	Propane	Butanes	Pentanes Plus	Total
Established Recoverable Natural Gas Liquids at December 31, 1963	253	160	492	905
Addition to Reserves during 1964	82	56	81	219
Natural Gas Liquids Produced during 1964	6	5	23	34
Established Recoverable Natural Gas Liquids at December 31, 1964	329	211	550	1090

The reserves of natural gas liquids consist of liquids estimated to be recoverable from the Province's established gas reserves

by processing to the extent that facilities have already been installed, or where processing facilities are not yet in operation, to the extent that the Board has knowledge of plans for the installation of such facilities.

The estimates have been prepared by applying the average liquid ratio over the remaining established marketable reserves of that pool. The average liquid recovery ratios have been estimated on the basis of history wherever fields have been producing for a reasonable length of time. Where plants are in the planning or construction stage or have been operating for only a short time, the rates have been based on submissions presented to the Board in support of applications under section 38 of The Oil and Gas Conservation Act, or, on the Board's general knowledge of plans for future processing plants in the Province. Changes in the composition of gas being processed and the recoveries expected from any particular pool have been based on the available reservoir fluid studies.

The increase in propane and butanes reserves during 1964 results from the addition or expected addition of fractionation facilities to process the gas reserves of several fields, and from increased recoveries expected from the reprocessing of pipe line gas. The increase in pentanes plus reserves may be attributed mainly to an increase in gas reserves for several fields and to expected increases in recoveries from some fields.

The more significant changes during the year occurred in the following fields:

Plant or Area	Dec. 31, 1963 Millions of Barrels	Dec. 31, 1964 Millions of Barrels	Change Millions of Barrels	Remarks
Propane				
Bonnie Glen	14.1	17.8	+3.7	Increase in gas reserves and in propane recovery rate.
Calgary	-	6.6	+6.6	Installation of propane recovery facilities.
Carson Creek	-	10.4	+10.4	Installation of propane recovery facilities.
Harmattan-Elkton	12.2	36.4	+24.2	Installation of deep cut propane recovery facilities.
Judy Creek	49.2	44.3	-4.9	Decrease in propane recovery ratio.
Leduc-Woodbend	10.0	19.0	+9.0	Increase in propane recovery ratio.
Pembina	21.5	26.6	+5.1	Increase in propane recovery ratio.
Pacific Petroleums Limited	80.0	95.0	+15.0	Increase in quantity of gas approved for removal from the Province by Trans-Canada Pipe Lines Ltd.
Butanes				
Bonnie Glen	9.0	13.4	+4.4	Increase in gas reserves and in butanes recovery ratio.

Plant or Area	Dec. 31, 1963 Millions of Barrels	Dec. 31, 1964 Millions of Barrels	Change Millions of Barrels	Remarks
Calgary	-	6.0	+6.0	Installation of butanes recovery facilities.
Carson Creek	3.4	8.9	+5.5	Installation of deep cut butanes recovery facilities.
Harmattan-Elkton	10.5	26.3	+15.8	Installation of deep cut butanes recovery facilities.
Pembina	16.3	22.0	+5.7	Increase in butanes recovery ratio.
Pacific Petroleums Limited	40.0	49.0	+9.0	Increase in the quantity of gas approved for removal from the Province by Trans-Canada Pipe Lines Ltd.
Pentanes Plus				
Carstairs	48.6	43.7	-4.9	Decrease in pentanes plus recovery ratio.
Edson	9.9	15.0	+5.1	Increase in gas reserves.
Harmattan-Elkton	66.5	76.2	+9.7	Increase in pentanes plus recovery ratio.
Pembina	14.3	22.6	+8.3	Increase in pentanes plus recovery ratio.
Pincher Creek	17.0	8.1	-8.9	Decrease in gas reserves.
Waterton	32.3	50.2	+17.9	Increase in gas reserves.

Details of the Board's current estimate of the established reserves of natural gas liquids are presented in Table II-1. The table does not show individually fields having reserves of less than five million barrels, however, the sum of these reserves is included under "Other Reserves" and in the Provincial total.

The Board recognizes that additional natural gas liquids could be recovered from the presently estimated reserves of gas. However, it has not in this report, attempted to estimate the additional recoverable reserves, nor the particular sources from which they may come.

TABLE II-1

ESTABLISHED RESERVES OF NATURAL GAS LIQUIDS IN THE PROVINCE OF ALBERTA, DECEMBER 31, 1964

(1)	(2)	(3)	(4)	(5)			(6)			
			REMAINING MARKETABLE RESERVES OF NATURAL GAS	LIQUID RECOVERY RATIOS BBLS/MMcF (MARKETABLE GAS)			RECOVERABLE LIQUIDS MILLIONS OF BARRELS			
PLANT	FIELD OR AREA	ZONE	BCF	PROPANE	BUTANES	PENTANES PLUS	PROPANE	BUTANES	PENTANES PLUS	TOTAL
Bonnie Glen	Bonnie Glen	Leduc	550	28.0	21.0	19.0	15.4	11.6	10.5	37.5
	Glen Park	Leduc	7	24.0	18.0	20.0	0.2	0.1	0.1	0.4
	Wizard Lake	Leduc	86	26.0	20.0	20.0	2.2	1.7	1.7	5.6
							17.8	13.4	12.3	43.5
Calgary (1)	Crossfield	Calgary Mississippian	572	11.0	10.0	29.0	6.3	5.7	16.6	28.6
		Calgary Wabamun	571	0.5	0.5	4.0	0.3	0.3	2.3	2.9
							6.6	6.0	18.9	31.5
Carson Creek	Carson Creek	Beaverhill Lake	230	23.0	21.0	55.0	5.3	4.8	12.7	22.8
	Carson Creek North	Beaverhill Lake	138	37.0	30.0	25.0	5.1	4.1	3.5	12.7
							10.4	8.9	16.2	35.5
Carstairs	Carstairs	Mississippian	680			27.0			18.4	18.4
	Crossfield	Crossfield Mississippian	938			27.0			25.3	25.3
									43.7	43.7
-	Edson	Mississippian	1500			10.0			15.0	15.0
Gilby (2)	Gilby	Blairmore, Jurassic and Pekisko	599			13.0			7.8	7.8
Harmattan-Elkton	Harmattan-Elkton	Mississippian	1030	13.0	10.0	33.0	13.4	10.3	34.0	57.7
		Leduc	30			6.0			0.2	0.2
	Harmattan East	Mississippian	1000	23.0	16.0	42.0	23.0	16.0	42.0	81.0
							36.4	26.3	76.2	138.9
Hussar (1)	Hussar	Colorado & Blairmore	413	9.0	6.0	4.0	3.7	2.5	1.7	7.9
Judy Creek (4)	Judy Creek	Beaverhill Lake	235	60.0	32.0	16.0	14.1	7.5	3.8	25.4
	Swan Hills	Beaverhill Lake	394	70.0	43.0	22.0	27.6	16.9	8.7	53.2
	Virginia Hills	Beaverhill Lake	34	75.0	42.0	20.0	2.6	1.4	0.7	4.7
							44.3	25.8	13.2	83.3
Leduc-Woodbend	Leduc-Woodbend	Nisku & Leduc	364	40.0	20.0	13.0	14.6	7.3	4.7	26.6
	Golden Spike	Nisku & Leduc	88	50.0	30.0	20.0	4.4	2.6	1.8	8.8
							19.0	9.9	6.5	35.4
Lookout Butte	Lookout Butte	Mississippian	400	10.0	12.0	50.0	4.0	4.8	20.0	28.8
Minnehik-Buck Lake	Minnehik-Buck Lake	Mississippian	384			18.0			6.9	6.9

(1)	(2)	(3)	(4)	(5)			(6)			
			REMAINING MARKETABLE RESERVES OF NATURAL GAS	LIQUID RECOVERY RATIOS BBLS/MMcf (MARKETABLE GAS)			RECOVERABLE LIQUIDS MILLIONS OF BARRELS			
PLANT	FIELD OR AREA	ZONE	BCF	PROPANE	BUTANES	PENTANES PLUS	PROPANE	BUTANES	PENTANES PLUS	TOTAL
NEVIS (1)	NEVIS	DEVONIAN	517	4.0	4.0	16.0	2.1	2.1	8.3	12.5
	STETTLER	NISKU AND LEDUC	8	37.0	35.0	22.0	0.3	0.3	0.2	0.8
	FENN-BIG VALLEY	NISKU AND LEDUC	40	34.0	32.0	22.0	1.4	1.3	0.9	3.6
	HACKETT	BLAIRMORE	50			6.0			0.3	0.3
							3.8	3.7	9.7	17.2
OLDS	OLDS	WABAMUN	250			53.0			13.3	13.3
PEMBINA (3)	PEMBINA	BLAIRMORE	168			8.0			1.3	1.3
		CARDIUM	760	35.0	29.0	28.0	26.6	22.0	21.3	69.9
							26.6	22.0	22.6	71.2
PINCHER CREEK	PINCHER CREEK	MISSISSIPPIAN	350	6.0	6.0	23.0	2.1	2.1	8.1	12.3
REDWATER	REDWATER	LEDUC	34	120.0	80.0	40.0	4.1	2.7	1.4	8.2
RIMBEY	HOMEGLEN RIMBEY	LEDUC	680	16.0	13.0	29.0	10.9	8.8	19.7	39.4
	WESTEROSE SOUTH	LEDUC	1120	24.0	16.0	39.0	26.9	17.9	43.7	88.5
							37.8	26.7	63.4	127.9
TURNER VALLEY	TURNER VALLEY	MISSISSIPPIAN	220	12.0		22.0	2.6		4.8	7.4
WATERTON	WATERTON	MISSISSIPPIAN	1071			46.0			49.3	49.3
		DEVONIAN	126			7.0			0.9	0.9
									50.2	50.2
WEST WHITECOURT	WINDFALL	LEDUC	461			120.0			55.3	55.3
WIMBORNE	WIMBORNE	LEDUC	225			35.0			7.9	7.9
WORSLEY	WORSLEY	LEDUC	191	6.0	4.0	17.0	1.2	0.8	3.3	5.3
SUB TOTAL							220.4	155.6	478.4	854.4
OTHER RESERVES (5)										
	SMALL FIELDS						3.8	3.5	50.0	57.3
	SMALL FIELDS PRESENTLY BEYOND ECONOMIC REACH						-	-	10.3	10.3
	GAS RE-PROCESSING - EDMONTON LIQUID GAS LTD.						10.0	3.0	-	13.0
	- PACIFIC PETROLEUMS LIMITED						95.0	49.0	11.0	155.0
TOTAL							329.2	211.1	549.7	1090.0

(1) PROCESSING CARRIED OUT IN TWO SEPARATE PLANTS.

(2) PROCESSING CARRIED OUT IN SIX SEPARATE PLANTS.

(3) PROCESSING CARRIED OUT IN THREE SEPARATE PLANTS.

(4) PRODUCTS ARE RECOVERED AT LEDUC-WOODBEND PLANT.

(5) INCLUDES ALL FIELDS AND OTHER AREAS WHERE RECOVERABLE LIQUID RESERVES ARE ESTIMATED AT LESS THAN FIVE MILLION BARRELS, PLUS RESERVES RECOVERABLE BY THE RE-PROCESSING OF PIPE LINE GAS.

III. THE PROVED RECOVERABLE RESERVES OF CRUDE OIL IN THE PROVINCE OF ALBERTA

The Board estimates the remaining proved recoverable reserves of crude oil in Alberta as of December 31, 1964, to be some 5.8 billion stock tank barrels. The present estimate represents an increase of some 2.0 billion stock tank barrels since December 31, 1963. A comparison of the 1963 and 1964 estimates appears in the following tabulation:

	Billions of Stock Tank Barrels
Remaining proved recoverable crude oil reserves at December 31, 1963	3.8
Additions to reserves during 1964	2.2
Crude oil produced during 1964	0.2
Remaining proved recoverable crude oil reserves at December 31, 1964	5.8

The increase in crude oil reserves is substantially greater than in previous years; primarily the result of recognition of enhanced recovery efficiency in new fluid injection schemes and improved recovery efficiency in existing schemes. In addition, the extensive review of all major oil reserves at the first annual reserves hearing in February, 1965, resulted in higher reserve estimates through recognition of higher recoveries in many natural depletion pools. Also contributing to the increase, although only to a minor degree, were some 60 million barrels of crude oil discovered during the year. While the 1964 discoveries are slightly below the trend of the past two years,

the Board believes that at least one of the discoveries (Mitsue) has started a play that in all probability will develop into an extensive reserve.

The most significant changes in the 1964 estimate of crude oil reserves occurred in the pools listed in the following table:

Pool	Board's Estimate Millions of Stock Tank Barrels as of Dec. 31, 1963	Dec. 31, 1964	Change Millions of Stock Tank Barrels	Remarks
Acheson D-3	90.0	96.9	+6.9	Effectiveness of assisted natural water drive.
Carson Creek North Beaverhill Lake A	10.0	29.2	+19.2	Waterflood enhanced recovery.
Carson Creek North Beaverhill Lake B	30.0	84.0	+54.0	Waterflood enhanced recovery.
Deer Mountain Beaverhill Lake	12.0	68.3	+56.3	Development.
Golden Spike South D-3	220.0	232.0	+12.0	Solvent flood enhanced recovery.
Judy Creek West Beaverhill Lake	35.0	115.0	+80.0	Waterflood enhanced recovery.
Kaybob Beaverhill Lake	43.0	120.0	+77.0	Waterflood enhanced recovery.
Mitsue Gilwood A	-	57.6	+57.6	New discovery.
Pembina Cardium	1160.0	1790.0	+630.0	Enhanced recovery by waterflood, solvent flood, and gas flood.

Pool	Board's Estimate Millions of Stock Tank Barrels as of Dec. 31, 1963	Dec. 31, 1964	Change Millions of Stock Tank Barrels	Remarks
Redwater D-3	770.0	780.0	+10.0	Effectiveness of natural water drive.
Swan Hills Beaverhill Lake	420.0	1090.0	+670.0	Waterflood enhanced recovery.

The term "crude oil" used in this report has its ordinary meaning and excludes all condensate and natural gas liquids.

The reserve estimates for crude oil refer solely to proved reserves and include only crude oil recoverable under existing economic and operating conditions. The proved reserves in any pool consist of the crude oil estimated to be recoverable by the production systems now in operation and from the area actually drilled on the spacing pattern in effect in that pool, as well as those under undrilled spacing units which are so close and so related to the drilled units that there is every reasonable probability that they will be produced when drilled, or will be recovered by existing wells. The reserves attributed to areas subject to fluid injection operations comprise only those portions which the performance of the schemes to date indicates are reasonably certain to be recovered. The estimates do not include crude oil obtainable from oil sands, oil shale, coal, or other substitute sources.

The crude oil reserves have been established having regard to submissions made to the Board by industry in connection with the

hearing in February, 1965, to data presented at hearings respecting maximum permissive rates (MPR's) of production, to submissions made to the Board respecting spacing units and fluid injection schemes, and to independent studies by the Board staff.

Contrary to the policy indicated in the Board's letter of December 23, 1964, respecting the establishment of recoverable reserves in crude oil pools subject to proration, the Board has for the purposes of this report reviewed the reserves of pools not considered at the February, 1965, hearing and has amended the estimates where appropriate. The reserves established as a result of the February, 1965, hearing are unchanged in this report.

The Board's finding with respect to the proved recoverable reserves of crude oil in the Province are set out in Table III-1. Certain of the pools in the table have been allocated proved reserves attributable to fluid injection schemes now in operation. For these pools Table III-2 shows a comparison of recoverable reserves and recovery factors before and after allocation of additional reserves attributable to the scheme. The reserves are given in stock tank barrels at standard conditions.

All designated crude oil pools listed in Table III-1 in alphabetic sequence according to Field name, and classified as Light and Medium or Heavy Crude Oil. In general heavy crude oil is defined as that having a gravity of 25° API or less. The Board has made exceptions to this criterion where appropriate, having regard for market utilization of the crude oil, and purchasers categorization. The reserves in all minor isolated accumulations not in designated Pools are included in "Undefined Pools".

TABLE III-1

PROVED RESERVES OF CRUDE OIL IN THE PROVINCE OF ALBERTA, DECEMBER 31, 1964

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
LIGHT AND MEDIUM CRUDE OIL						
ACHESON BLAIRMORE A	8,500	0.035	298	194	104	
ACHESON BLAIRMORE B	2,000	0.013	26	26	0	SUSPENDED, 1961
ACHESON BLAIRMORE C	1,500	0.200	300	264	36	
ACHESON BLAIRMORE F	1,000	0.100	100	39	61	
ACHESON BLAIRMORE G	610	0.100	61	16	45	
ACHESON OTHER BLAIRMORE	2,580	0.070	180	148	32	
ACHESON NORTH D-2	3,600	0.500	1,800	1,540	260	
ACHESON OTHER D-2	316	0.340	107	84	23	
ACHESON D-3	149,000	0.650	96,900 (1)	28,491	68,409	
ACHESON EAST BLAIRMORE A	2,880	0.170	490	438	52	
ACHESON EAST BLAIRMORE B	6,000	0.070	420	309	111	
AERIAL MANNVILLE	5,080	0.130	660	390	270	
ALIX D-2	6,570	0.250	1,640	530	1,110	
ALLIANCE BLAIRMORE	5,500	0.020	110	93	17	SUSPENDED, 1955
ANTE CREEK BEAVERHILL LAKE	23,600	0.100	2,360	374	1,986	
ARMISIE BLAIRMORE	5,900	0.090	531	461	70	
BARONS COLORADO	1,690	0.300	507	414	93	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
Bashaw Ireton	3,000	0.100	300	25	275	
Bashaw D-2	6,240	0.150	935	45	890	
Bashaw D-3	11,300	0.150	1,700	681	1,019	
Battle Viking	2,670	0.320	855	788	67	
Battle North Viking	1,520	0.282	430	287	143	
Battle South Viking	3,230	0.310	1,000	914	86	
Bellshill Lake Blairmore	206,000	0.130	25,000	6,880	18,120	
Bigoray Ostracod	15,800	0.120	1,900 (2)	737	1,163	
Bonnie Glen Cardium A	6,500	0.120	780	581	199	
Bonnie Glen D-2A	871	0.080	70	57	13	
Bonnie Glen D-3A	600,000	0.650	390,000	83,574	306,426	
Boundary Lake South Triassic A	761	0.100	76	10	66	Oil Pool in Gas Field
Buffalo Lake D-3	8,880	0.550	4,880	818	4,062	
Campbell Blairmore A	18,000	0.050	900	780	120	
Campbell Blairmore B	420	0.100	42	38	4	
Namao Blairmore A	15,500	0.050	775	595	180	
Namao Blairmore C	933	0.150	140	110	30	
Namao Blairmore D	555	0.120	67	49	18	
Caroline Cardium A	1,200	0.050	60	12	48	Oil Pool in Gas Field
Caroline Viking A	521	0.100	52	15	37	Oil Pool in Gas Field
Caroline Viking B	730	0.150	110	40	70	Oil Pool in Gas Field
Caroline Viking C	411	0.100	41	14	27	Oil Pool in Gas Field
Carson Creek North Beaverhill Lake A	65,000	0.450	29,200 (1)	1,885	27,315	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
CARSON CREEK NORTH BEAVERHILL LAKE B	210,000	0.400	84,000 (1)	3,634	80,366	
CHAMBERLAIN BLAIRMORE	2,600	0.060	156	130	26	
CHIGWELL VIKING A	1,200	0.050	60	22	38	
CHIGWELL VIKING B	1,500	0.050	75	9	66	
CHIGWELL D-2A	800	0.150	120	98	22	
CHIGWELL D-2B	730	0.060	44	39	5	
CHIGWELL D-3A	393	0	0	0	0	SUSPENDED, 1964
CHOICE BLAIRMORE	8,500	0.040	340	187	153	
CLIVE D-2A	8,400	0.200	1,680	413	1,267	
CLIVE D-3A	10,300	0.400	4,100	2,225	1,875	
COUNTESS BASAL QUARTZ D	783	< 0.010	1	0	1	SUSPENDED, 1959
CROSSFIELD CARDIUM A	160,000	0.100	16,000 (2)	7,861	8,139	
CROSSFIELD JUMPING POUND	550	0.100	55	23	32	
CROSSFIELD ELKTON A	2,510	0.100	251	13	238	
CYN-PEM CARDIUM	50,000	0.120	6,000	499	5,501	
DEER MOUNTAIN BEAVERHILL LAKE	455,000	0.150	68,300 (2)	2,576	65,724	
DEL BONITA RUNDLE	2,000	0.250	500	448	52	
DRUMHELLER BLAIRMORE A	3,200	0.013	42	42	0	
DRUMHELLER BLAIRMORE B	830	0.100	83	3	80	
DRUMHELLER D-2A	8,160	0.650	5,300	2,763	2,537	
DRUMHELLER D-2B	8,220	0.450	3,700	276	3,424	
DUHAMEL D-2	12,300	0.450	5,540	2,999	2,541	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
DUHAMEL NORTH D-3	14,100	0.500	7,050	3,039	4,011	
DUHAMEL SOUTH D-3	1,200	0.100	120	101	19	
EAGLESHAM D-3A	3,470	0.450	1,560	410	1,150	
EDSON CARDIUM A	533	0.120	64	50	14	
EDSON CARDIUM B	12,200	0.120	1,460	112	1,348	
ELLERSLIE BLAIRMORE A	500	0.100	50	24	26	
ELLERSLIE BLAIRMORE B	1,170	0.350	410	346	64	
ERSKINE D-2	2,870	0.150	430	125	305	
ERSKINE D-3	38,600	0.500	19,300	10,840	8,460	
EWING LAKE D-2A	950	0.200	190	170	20	
EWING LAKE D-2B	3,140	0.350	1,100	153	947	
EWING LAKE D-2C	2,820	0.200	564	198	366	
EWING LAKE D-3A	3,250	0.400	1,300	560	740	
EXCELSIOR MANNVILLE A	4,400	<0.010	4	4	0	SUSPENDED
EXCELSIOR D-2	30,800	0.650	20,000	10,874	9,126	
BON ACCORD D-2	6,500	0.140	910	778	132	
FAIRYDELL D-2	4,210	0.380	1,600	697	903	
FAIRYDELL D-3	17,400	0.550	9,570	3,528	6,042	
FENN BIG VALLEY D-2	350,000	0.550	193,000	69,527	123,473	
BIG VALLEY D-3	3,390	0.470	1,590	1,352	238	
BIG VALLEY NORTH D-3	1,640	0.450	738	151	587	
FENN D-3	1,450	0.110	160	117	43	
FENN NORTH D-3	13,000	0.550	7,150	3,407	3,743	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
FENN WEST D-2A	15,000	0.400	6,000	1,051	4,949	
FERRIER CARDIUM A	1,530	<0.010	1	1	0	SUSPENDED, 1964
FERRIER CARDIUM B	863	0.080	69	48	21	
FERRIER CARDIUM C	1,100	0.050	55	7	48	
FERRIER VIKING	20,000	0.100	2,000	775	1,225	
GARRINGTON CARDIUM A & B	145,000	0.080	11,600 (2)	5,378	6,222	
GILBY BELLY RIVER A	1,800	0.100	180	31	149	
GILBY VIKING A (TOTAL)	38,500	-	17,200 (1)	9,295	7,905	
GILBY VIKING A (PRIMARY)	811	0.200	162	-	-	
GILBY VIKING A (WATERFLOOD)	37,700	0.450	17,000	-	-	
GILBY VIKING B	6,400	0.200	1,280	401	879	
GILBY BASAL MANNVILLE B	51,100	0.080	4,090	587	3,503	
GILBY JURASSIC B	80,000	0.120	9,600	1,596	8,004	
GILBY RUNDLE B	1,100	0.020	22	13	9	
GILBY RUNDLE E	5,600	0.100	560	43	517	
GLEN PARK GLAUCONITIC A	1,220	0.180	220	207	13	
GLEN PARK D-2A	1,910	0.100	191	120	71	
GLEN PARK D-3A	27,000	0.650	17,600	4,141	13,459	
GOLDEN SPIKE NORTH D-2A	1,920	0.120	230	190	40	
GOLDEN SPIKE SOUTH D-2A	11,700	0.250	2,930	935	1,995	
GOLDEN SPIKE NORTH D-3A	2,110	0.270	570	523	47	
GOLDEN SPIKE SOUTH D-3A	310,000	0.750	232,000 (1)	32,710	199,290	
GOLDEN SPIKE SOUTH D-3B	3,980	0.300	1,190	517	673	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
GOOSE RIVER BEAVERHILL LAKE	143,000	0.160	22,900	340	22,560	
HAMILTON LAKE VIKING A	23,800	0.160	3,800 (2)	1,894	1,906	
HAMILTON LAKE VIKING B	8,000	0.100	800	20	780	
HARMATTAN EAST BLAIRMORE	1,800	0.100	180	74	106	
HARMATTAN EAST RUNDLE	179,000	0.350	62,600	12,221	50,379	
HARMATTAN-ELKTON MAIN RUNDLE	170,000	0.330	56,000	15,811	40,189	
HARMATTAN-ELKTON RUNDLE B	712	0.100	71	6	65	
HESPERO D-2	200	0.030	6	6	0	ABANDONED, 1955
HOMEGLEN-RIMBEY D-3	93,500	0.075	7,000	4,795	2,205	
HUSSAR GLAUCONITIC A	835	0.030	25	22	3	
HUSSAR GLAUCONITIC B	425	<0.010	1	1	0	SUSPENDED, 1960
HUSSAR GLAUCONITIC C	260	0.050	13	13	0	SUSPENDED, 1962
HUSSAR GLAUCONITIC E	1,100	0.050	55	36	19	
HUSSAR GLAUCONITIC F	467	0.060	28	23	5	
HUSSAR GLAUCONITIC G	610	0.100	61	41	20	
HUSSAR OSTRACOD A	43,900	0.400	17,600	2,922	14,678	
HUSSAR OSTRACOD C	1,500	0.050	75	31	44	
HUSSAR OSTRACOD H	300	0.010	3	3	0	ABANDONED, 1963
HUSSAR OSTRACOD N	1,060	0.010	106	8	98	
HUSSAR BASAL QUARTZ A	605	0.038	23	23	0	ABANDONED, 1961
HUSSAR BASAL QUARTZ C	630	0.100	63	54	9	
HUSSAR BASAL QUARTZ E	1,350	0.013	18	18	0	SUSPENDED, 1962
HUSSAR BASAL QUARTZ G	1,400	0.014	2	2	0	SUSPENDED, 1961

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
HUSSAR BASAL QUARTZ H	1,800	<0.010	1	1	0	ABANDONED, 1961
HUSSAR BASAL QUARTZ I	7,300	0.100	730	70	660	
HUSSAR BASAL QUARTZ L	224	0.058	13	13	0	SUSPENDED, 1963
HUTTON VIKING	8,810	0.420	3,700	473	3,227	
INNISFAIL BLAIRMORE	522	0.059	31	31	0	SUSPENDED, 1958
INNISFAIL D-3	120,000	0.550	66,000	16,727	49,273	
JOARCAM VIKING	150,000	0.370	55,000 (2)	48,746	6,254	
JOFFRE VIKING	80,100	0.410	32,800 (1)	30,555	2,245	
JOFFRE BLAIRMORE A	1,210	0.050	60	26	34	
JOFFRE BLAIRMORE B	1,100	0.100	110	68	42	
JOFFRE D-2	140,000	0.140	19,600	13,628	5,972	
JOFFRE SOUTH VIKING	1,250	0.290	362	329	33	
JUDY CREEK BEAVERHILL LAKE	809,000	0.450	364,000 (1)	19,194	344,806	
JUDY CREEK WEST BEAVERHILL LAKE	256,000	0.450	115,000 (1)	4,959	110,041	
JUDY CREEK SOUTH BEAVERHILL LAKE	13,100	0.150	1,970	305	1,665	
KAYBOB CADOMIN B	32,100	0.100	3,210	117	3,093	
KAYBOB BEAVERHILL LAKE A	300,000	0.400	120,000 (1)	13,789	106,211	
KAYBOB BEAVERHILL LAKE B	1,310	0.160	210	44	166	OIL POOL IN GAS FIELD
KAYBOB SOUTH TRIASSIC	131,000	0.150	19,600	1,746	17,854	
KESSLER VIKING	666	0.150	100	80	20	OIL POOL IN GAS FIELD
LANAWAY CARDIUM	12,000	0.060	720	264	456	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
LANAWAY MANNVILLE	3,200	0.050	160	74	86	
LANAWAY D-3A	1,540	0.100	154	3	151	
LEAFLAND CARDIUM	62,900	0.080	5,030 (2)	1,458	3,572	
LEAFLAND VIKING	2,610	0.150	392	229	163	
LEAFLAND GLAUCONITIC	1,000	0.100	100	25	75	
LEDUC-WOODBEND GILBERT BLAIRMORE	5,850	0.400	2,340	1,999	341	
LEDUC-WOODBEND NORTH WOODBEND BLAIRMORE A	7,500	0.170	1,270	1,056	214	
LEDUC-WOODBEND NORTH WOODBEND BLAIRMORE B	172	0.070	12	12	0	ABANDONED, 1962
LEDUC-WOODBEND WEST DEVON BLAIRMORE	1,920	0.120	230	212	18	
LEDUC-WOODBEND BLAIRMORE C	400	<0.010	1	1	0	ABANDONED, 1956
LEDUC-WOODBEND BLAIRMORE D	3,000	0.020	60	60	0	ABANDONED, 1962
LEDUC-WOODBEND BLAIRMORE E	3,800	0.025	95	83	12	
LEDUC-WOODBEND BLAIRMORE F	4,200	<0.010	21	21	0	ABANDONED, 1963
LEDUC-WOODBEND BLAIRMORE G	800	<0.010	4	4	0	ABANDONED, 1954
LEDUC-WOODBEND BLAIRMORE H	240	0.0125	3	3	0	ABANDONED, 1951
LEDUC-WOODBEND D-1A	1,000	0.020	20	5	15	
LEDUC-WOODBEND D-1B	250	0.080	20	7	13	
LEDUC-WOODBEND D-2A	205,000	0.450	92,300 (1)	70,056	22,244	
LEDUC-WOODBEND D-2B	73,200	0.280	20,500 (2)	19,713	787	
LEDUC-WOODBEND D-2C	2,600	0.500	1,300	1,281	19	
LEDUC-WOODBEND D-2D	410	0.550	226	198	28	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
LEDUC-WOODBEND D-2E	1,100	0.550	605	560	45	
LEDUC-WOODBEND D-2F	2,500	0.200	500	35	465	
LEDUC-WOODBEND D-3A	295,000	0.650	192,000 (1)	150,667	41,333	
LEDUC-WOODBEND D-3B	15,500	0.450	6,650	6,028	622	
LEDUC-WOODBEND D-3C	837	0.525	440	440	0	SUSPENDED, 1961
LEDUC-WOODBEND D-3D	714	0.400	286	279	7	
LEGAL VIKING	2,000	0.400	800	605	195	
LEGAL MANNVILLE B	240	0.100	24	6	18	
LITTLE SMOKY D-3	2,500	0.400	1,000	647	353	
LOUSANA D-2	2,610	0.330	860	157	703	
MALMO BLAIRMORE	5,000	0.200	1,000	746	254	
MALMO D-2	16,200	0.430	6,970	4,409	2,561	
MALMO D-3	9,530	0.500	4,760	2,328	2,432	
MEDICINE RIVER CARDIUM A	520	<0.010	1	1	0	
MEDICINE RIVER VIKING A	400	0.100	40	14	26	
MEDICINE RIVER GLAUCONITIC A	1,110	0.100	111	17	94	
MEDICINE RIVER GLAUCONITIC B	917	0.100	92	11	81	
MEDICINE RIVER GLAUCONITIC C	869	0.100	87	4	83	
MEDICINE RIVER OSTRACOD A	6,700	0.100	670	72	598	
MEDICINE RIVER OSTRACOD B	685	0.100	69	24	45	
MEDICINE RIVER OSTRACOD C	2,040	0.050	102	6	96	
MEDICINE RIVER BASAL QUARTZ B	36,200	0.100	3,620	446	3,174	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
MEDICINE RIVER BASAL QUARTZ C	412	<0.010	3	3	0	ABANDONED, 1963
MEDICINE RIVER BASAL QUARTZ D	2,470	0.050	123	17	106	
MEDICINE RIVER BASAL QUARTZ F	871	0.050	44	4	40	
MEDICINE RIVER BASAL QUARTZ G	8,020	0.050	401	51	350	
MEDICINE RIVER BASAL QUARTZ H	1,000	0.100	100	14	86	
MEDICINE RIVER BASAL QUARTZ I	1,650	0.050	83	18	65	
MEDICINE RIVER JURASSIC A	39,700	0.150	5,950	1,628	4,322	
MEDICINE RIVER JURASSIC B	7,300	0.120	875	94	781	
MEDICINE RIVER JURASSIC C	52,900	0.120	6,350	327	6,023	
MEDICINE RIVER JURASSIC D	53,200	0.150	7,980	351	7,629	
MEDICINE RIVER JURASSIC E	895	<0.010	1	0	1	SUSPENDED, 1962
MEDICINE RIVER ELKTON A	2,000	0.030	60	38	22	
MEDICINE RIVER PEKISKO B	5,470	0.150	820	167	653	
MEDICINE RIVER PEKISKO C	20,900	0.110	2,300	141	2,159	
MEDICINE RIVER PEKISKO D	200	0.050	10	9	1	
MEDICINE RIVER PEKISKO E	14,900	0.100	1,490	74	1,416	
MEDICINE RIVER PEKISKO F	3,260	<0.010	10	4	6	
MEDICINE RIVER PEKISKO G	1,160	<0.010	1	1	0	
MEDICINE RIVER PEKISKO H	1,500	0.020	30	4	26	
MEDICINE RIVER PEKISKO I	32,700	0.150	4,900	580	4,320	
MEDICINE RIVER PEKISKO J	1,000	0.020	20	1	19	
MITSUE GILWOOD A	288,000	0.200	57,600	61	57,539	INCLUDES SYLVIA GILWOOD A
MORINVILLE BASAL QUARTZ	1,250	0.016	20	20	0	
MORINVILLE D-1A	352	0.128	45	45	0	OIL POOL IN GAS FIELD - SUSPENDED, 1959

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
MORINVILLE D-3A	570	0.300	171	134	37	OIL POOL IN GAS FIELD
MORINVILLE D-3B	8,150	0.200	1,630	63	1,567	
MORINVILLE D-3C	1,380	0.300	414	32	382	OIL POOL IN GAS FIELD
NEVIS D-2	2,700	0.033	89	89	0	OIL POOL IN GAS FIELD - SUSPENDED, 1960
NEW NORWAY BLAIRMORE	435	<0.010	1	1	0	ABANDONED, 1956
NEW NORWAY D-2	12,000	0.600	7,200	2,936	4,264	
NEW NORWAY D-3	2,000	0.500	1,000	820	180	
NORMANDVILLE JURASSIC	754	0.011	8	8	0	ABANDONED, 1961
NORMANDVILLE MISSISSIPPIAN B	147	0.040	6	6	0	ABANDONED, 1961
NORMANDVILLE D-1	3,330	0.150	500	339	161	
NORMANDVILLE D-3A	2,590	0.500	1,300	514	786	
NORMANDVILLE D-3B	3,540	0.430	1,520	554	966	
PEAVEY VIKING	2,950	0.070	200	103	97	
PEAVEY BLAIRMORE	3,640	0.130	470 (2)	416	54	
PEMBINA KEYSTONE BELLY RIVER B	87,900	0.150	13,200	1,043	12,157	
PEMBINA KEYSTONE BELLY RIVER C	44,700	0.150	6,700	732	5,968	
PEMBINA BELLY RIVER G	1,360	0.110	150	123	27	
PEMBINA BELLY RIVER H	5,810	0.100	581	125	456	
PEMBINA BELLY RIVER I	40,100	0.150	6,000 (2)	1,646	4,354	
PEMBINA BELLY RIVER J	10,200	0.170	1,730	221	1,509	
PEMBINA KEYSTONE BELLY RIVER K	865	0.150	130	36	94	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
PEMBINA KEYSTONE BELLY RIVER L	19,300	0.150	2,900	285	2,615	
PEMBINA KEYSTONE BELLY RIVER M	39,100	0.120	4,700	479	4,221	
PEMBINA KEYSTONE BELLY RIVER O	500	0.100	50	11	39	
PEMBINA KEYSTONE BELLY RIVER P	842	<0.010	0	0	0	
PEMBINA BELLY RIVER Q	1,020	0.060	61	45	16	
PEMBINA BELLY RIVER R	3,200	<0.010	0	0	0	
PEMBINA KEYSTONE BELLY RIVER U	8,700	0.150	1,300	29	1,271	
PEMBINA CARDIUM (TOTAL)	7,690,000	0.233	1,790,000 (1)	354,512	1,435,488	
PEMBINA CARDIUM PRIMARY (DRILLED)	1,867,000	0.0996	186,000 (3)			
PEMBINA CARDIUM PRIMARY (UNDRILLED)	343,000	0.0466	16,000			
PEMBINA CARDIUM (GAS FLOOD)	46,100	0.170	7,840			
PEMBINA CARDIUM (PARTIAL GAS FLOOD)	512,000	0.120	61,400			
PEMBINA CARDIUM (WATERFLOOD)	4,500,000	0.300	1,350,000			
PEMBINA CARDIUM (MISCIBLE FLOOD)	423,000	0.400	169,000			
PEMBINA KEYSTONE BLAIRMORE A	3,850	0.050	192	137	55	
PEMBINA PEKISKO A	742	0.150	111	57	54	
PROVOST VIKING	1,710	0.112	191	118	73	OIL POOL IN GAS FIELD

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
RED EARTH GRANITE WASH	39,600	0.200	7,920	274	7,646	
REDWATER D-3	1,300,000	0.600	780,000	294,552	485,448	
ROCKY MOUNTAIN HOUSE CARDIUM	7,860	0.070	550	487	63	
ROSEBUD BLAIRMORE	2,400	0.130	312	221	91	
ROWLEY PEKISKO	19,700	0.050	985	212	773	
SAMSON BLAIRMORE WEST	6,500	0.020	130	103	27	
SIMONETTE D-3	77,500	0.550	42,600	3,613	38,987	
SKARO COOKING LAKE	710	0.100	71	52	19	
SNIPE LAKE BEAVERHILL LAKE	198,000	0.120	23,700	2,486	21,214	
SPRING COULEE RUNDLE	2,600	0.027	70	64	6	
BIG LAKE D-1	1,600	0.250	400	212	188	
ST. ALBERT D-1	320	0.150	48	34	14	
BIG LAKE D-2	2,500	0.400	1,000	546	454	
BIG LAKE D-3	23,300	0.600	14,000	2,352	11,648	
ST. ALBERT D-3	8,000	0.550	4,400	1,276	3,124	
STETTLER D-2	58,000	0.410	24,000 (1)	13,730	10,270	
STETTLER MAIN D-3	32,500	0.550	17,900	5,986	11,914	
STETTLER NORTH-EAST D-3	1,830	0.500	915	396	519	
STETTLER SOUTH D-2	10,000	0.280	2,800	561	2,239	
STETTLER SOUTH D-3	2,000	0.400	800	560	240	
STURGEON LAKE D-3	44,400	0.500	22,200	4,739	17,461	
STURGEON LAKE SOUTH TRIASSIC A	15,000	0.080	1,200	897	303	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
STURGEON LAKE SOUTH TRIASSIC B	7,560	0.250	1,890	350	1,540	
STURGEON LAKE SOUTH D-2	360	0.050	18	18	0	ABANDONED, 1963
STUGEON LAKE SOUTH D-3	256,000	0.550	141,000	24,638	116,362	
SUNDRE RUNDLE A (TOTAL)	79,300	0.382	30,300 (1)	9,365	20,935	
SUNDRE RUNDLE A (PRIMARY)	9,170	0.250	2,290 (3)			
SUNDRE RUNDLE A (WATERFLOOD)	70,100	0.400	28,000			
SUNDRE RUNDLE B	17,500	0.160	2,800	487	2,313	
SWAN HILLS BEAVERHILL LAKE A & B (TOTAL)	2,770,000	0.394	1,090,000 (1)	56,264	1,033,736	
SWAN HILLS BEAVERHILL LAKE A & B (PRIMARY)	445,000	0.137	64,250			
SWAN HILLS BEAVERHILL LAKE A & B (WATERFLOOD)	2,326,000	0.440	1,026,000			
SYLVAN LAKE GLAUCONITIC C	2,120	0.050	106	10	96	
SYLVAN LAKE OSTRACOD A	1,600	<0.010	7	5	2	
SYLVAN LAKE BASAL QUARTZ A	2,740	0.050	137	6	131	OIL POOL IN GAS FIELD - SUSPENDED, 1964
SYLVAN LAKE DETRITAL B	6,120	<0.010	15	7	8	OIL POOL IN GAS FIELD
SYLVAN LAKE DETRITAL C	700	<0.010	1	1	0	SUSPENDED, 1964
SYLVAN LAKE JURASSIC A	26,300	0.100	2,630	270	2,360	
SYLVAN LAKE JURASSIC B	1,400	0.050	70	5	65	
SYLVAN LAKE JURASSIC C	2,600	0.010	26	13	13	
SYLVAN LAKE JURASSIC D	2,700	0.100	270	36	234	
SYLVAN LAKE JURASSIC E	4,570	<0.010	20	7	13	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
SYLVAN LAKE JURASSIC I	2,350	<0.010	20	1	19	
SYLVAN LAKE ELKTON B	5,470	0.150	820	37	783	
SYLVAN LAKE ELKTON C	30,000	0.150	4,500	172	4,328	
SYLVAN LAKE ELKTON D	830	0	0	0	0	SUSPENDED, 1963
SYLVAN LAKE ELKTON E	700	0.100	70	5	65	OIL POOL IN GAS FIELD
SYLVAN LAKE ELKTON F	2,860	0.100	286	17	269	OIL POOL IN GAS FIELD
SYLVAN LAKE PEKISKO B	42,900	0.150	6,430	318	6,112	
SYLVAN LAKE PEKISKO C	14,300	0.100	1,430	55	1,375	
SYLVAN LAKE PEKISKO D	10,100	0.100	1,010	187	823	
SYLVAN LAKE PEKISKO E	2,280	<0.010	4	4	0	OIL POOL IN GAS FIELD - SUSPENDED, 1964
SYLVAN LAKE PEKISKO F	830	0	0	0	0	ABANDONED, 1963
SYLVAN LAKE PEKISKO G	5,220	<0.010	1	1	0	OIL POOL IN GAS FIELD - SUSPENDED, 1963
SYLVAN LAKE D-3A	5,800	0.050	290	29	261	
THOMPSON LAKE BLAIRMORE	15,000	0.100	1,500	778	722	
TURNER VALLEY SHALLOW	4,460	0.120	536	534	2	
TURNER VALLEY RUNDLE	1,000,000	0.120	120,000	113,000	7,000	
TWINING RUNDLE	34,000	0.100	3,400	546	2,854	
TWINING NORTH BANFF	180	<0.010	1	0	1	SUSPENDED, 1962
TWINING NORTH RUNDLE	43,000	0.100	4,300	308	3,992	
UTIKUMA LAKE GRANITE WASH A	30,200	0.200	6,040	193	5,847	
VIRGINIA HILLS BEAVERHILL LAKE (TOTAL)	450,000	-	174,000 (1)	12,295	161,705	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
VIRGINIA HILLS BEAVERHILL LAKE (PRIMARY)	23,200	0.150	3,480	-	-	
VIRGINIA HILLS BEAVERHILL LAKE (WATERFLOOD)	427,000	0.400	171,000	-	-	
WATERTON RUNDLE	424	<0.010	3	3	0	SUSPENDED, 1961
WAYNE-ROSEDALE BASAL QUARTZ B	18,500	0.040	740	558	182	
WAYNE-ROSEDALE BASAL QUARTZ G	488	<0.010	1	1	0	SUSPENDED, 1963
WEST DRUMHELLER D-2A	40,500	0.550	22,300	11,913	10,387	
WEST DRUMHELLER D-2B	80	0.060	5	4	1	
WEST DRUMHELLER D-3A	8,180	0.500	4,090	1,962	2,128	
WESTEROSE D-3	154,000	0.630	97,000	17,764	79,236	
WESTWARD HO VIKING A	465	0.050	23	5	18	
WESTWARD HO RUNDLE A	35,000	0.160	5,600 (2)	4,128	1,472	
WHITEMUD BLAIRMORE	1,500	0.180	270	243	27	
WILLESDEN GREEN BELLY RIVER A	8,000	0.150	1,200	126	1,074	
WILLESDEN GREEN BELLY RIVER B	14,000	0.100	1,400	93	1,307	
WILLESDEN GREEN BELLY RIVER C	267	0.150	40	23	17	
WILLESDEN GREEN CARDIUM	325,000	0.080	26,000 (2)	10,639	15,361	
WIMBORNE D-2A	4,300	0.200	860	237	623	
WIMBORNE D-2B	2,070	0.100	207	15	192	
WIMBORNE D-3A	94,700	0.063	6,000	1,207	4,793	
WINDFALL D-3	102,000	<0.010	1,000	499	501	OIL POOL IN GAS FIELD
WIZARD LAKE BLAIRMORE A	505	<0.010	3	3	0	SUSPENDED, 1959
WIZARD LAKE BLAIRMORE B	551	<0.010	2	2	0	SUSPENDED, 1961

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
WIZARD LAKE D-2A	2,740	0.200	548	428	120	
WIZARD LAKE D-3A	380,000	0.580	220,000	43,727	176,273	
WIZARD LAKE D-3B	1,010	0.300	303	15	288	
WOOD RIVER D-2A	1,770	0.150	265	5	260	
WOOD RIVER D-3A	1,850	0.300	555	115	440	
WORSLEY TRIASSIC A	1,250	0.200	250	66	184	OIL POOL IN GAS FIELD
YEKAU LAKE D-2	602	0.100	1	1	0	SUSPENDED, 1964
YEKAU LAKE D-3	6,060	0.500	3,030	802	2,228	
YOUNGSTOWN ARCS	4,620	0.130	600	276	324	
UNDEFINED POOLS	293,138		35,613	6,532	29,081	
TOTAL LIGHT AND MEDIUM CRUDE	23,396,954		7,557,189	1,799,642	5,757,547	
HEAVY CRUDE OIL						
ALDERSON MANNVILLE	2,390	0.100	239	89	150	
BANTRY MANNVILLE	111,000	0.220	24,400	2,482	21,918	
BANTRY EAST MANNVILLE	25,900	0.200	5,170	88	5,082	
BANTRY SOUTH MANNVILLE	9,530	0.200	1,910	156	1,754	
BANTRY WEST MANNVILLE A	23,800	0.200	4,750	48	4,702	
BAXTER LAKE WAINWRIGHT	4,000	0.100	400	356	44	
BONNYVILLE COLONY	4,920	0.039	193	193	0	ABANDONED, 1958
CESSFORD BASAL COLORADO B	22,000	0.100	2,200	1,716	484	
CESSFORD BASAL COLORADO C	39,000	0.100	3,900	974	2,926	
CESSFORD BASAL COLORADO D	980	0.150	147	71	76	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
CESSFORD MANNVILLE B	790	0.070	55	47	8	
CESSFORD MANNVILLE C	31,600	0.060	1,900	762	1,138	
CESSFORD MANNVILLE D	6,600	0.100	660	265	395	
CESSFORD MANNVILLE E	936	0.060	56	19	37	
CESSFORD PEKISKO A	300	0.030	9	8	1	
CHAUVIN MAIN MANNVILLE	13,800	0.200	2,760 (1)	1,602	1,158	
CHAUVIN OTHER MANNVILLE	850	0.100	85	56	29	
CHAUVIN SOUTH MANNVILLE	2,570	0.040	103	81	22	
CHIN COULEE MANNVILLE	7,860	0.100	786	181	605	
CONRAD ELLIS	16,000	0.150	2,400	2,265	135	
DINA SPARKY	2,620	0.100	262	183	79	
GLENEVIS BANFF	24,500	0.200	4,900	1,236	3,664	
HAROLD LAKE COLONY	810	0.030	24	10	14	SUSPENDED, 1959
HAZELDINE MANNVILLE A	8,790	0.030	254	11	243	
HORSEFLY LAKE MANNVILLE	6,900	0.100	690	106	584	
HUGHENDEN NORTH BLAIRMORE	9,730	0.010	97	77	20	
HUGHENDEN SOUTH BLAIRMORE	10,800	0.010	108	45	63	
LLOYDMINSTER SPARKY	186,000	0.100	18,600	13,551	5,049	
LLOYDMINSTER COLONY	1,000	0.100	100	94	6	
MATZIWIN PEKISKO A	5,550	0.200	1,110	68	1,042	
MATZIWIN PEKISKO B	1,060	0.100	106	8	98	
PADDLE RIVER RUNDLE B	6,510	0.100	651	151	500	OIL POOL IN GAS FIELD
PRINCESS BASAL BLAIRMORE A	240	0.100	24	24	0	SUSPENDED, 1960
PRINCESS BANFF A	4,640	0.110	510	505	5	
PRINCESS JEFFERSON	3,340	0.100	334	334	0	SUSPENDED, 1952

(1)	(2)	(3)	(4)	(5)	(6)	(7)
POOL	INITIAL CRUDE OIL IN PLACE THOUSANDS OF ST BBL	RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL THOUSANDS OF ST BBL	CUMULATIVE PRODUCTION TO DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMAINING RECOVERABLE CRUDE OIL AS OF DECEMBER 31, 1964 THOUSANDS OF ST BBL	REMARKS
TABER MANNVILLE A	16,000	0.100	1,600	1,127	473	
TABER MANNVILLE B	8,400	0.250	2,100	1,611	489	
TABER SOUTH MANNVILLE A	40,800	0.100	4,080	248	3,832	
TABER SOUTH MANNVILLE B	13,400	0.100	1,340	71	1,269	
TABER SOUTH-EAST MANNVILLE	6,300	0.100	630	127	503	
VERMILLION SPARKY	27,000	0.050	1,350	1,348	2	SUSPENDED, 1960
WAINWRIGHT WAINWRIGHT	119,000	0.130	15,500 (1)	7,336	8,164	
UNDEFINED POOLS	42,490		4,114	677	3,437	
TOTAL HEAVY CRUDE	870,706		110,607	40,407	70,200	
PROVINCIAL TOTAL	24,267,660		7,667,796	1,840,049	5,827,747	

(1) SEE TABLE III-2

(2) FLUID INJECTION SCHEMES ARE IN OPERATION BUT NO ADDITIONAL RECOVERABLE RESERVES ARE ATTRIBUTED TO THEM AS YET

(3) COMPRISES THAT PORTION OF THE POOL SUBJECT TO PRIMARY DEPLETION OR TO FLUID INJECTION SCHEMES OF UNDEMONSTRATED EFFICACY

TABLE III-2

INCREASE IN PROVED INITIAL RECOVERABLE RESERVES OF CRUDE OIL ATTRIBUTABLE TO FLUID INJECTION SCHEMES, DECEMBER 31, 1964

(1)	(2)	(3)	(4)	(5)
POOL	NATURAL DEPLETION RECOVERY FACTOR FRACTION	INITIAL RECOVERABLE CRUDE OIL BY NATURAL DEPLETION MILLIONS OF ST BBL	RECOVERY FACTOR INCLUDING EFFECT OF FLUID INJECTION FRACTION	INITIAL RECOVERABLE CRUDE OIL MILLIONS OF ST BBL
ACHESON D-3	.54	80.5	.65	96.9
CARSON CREEK NORTH BEAVERHILL LAKE A	.15	9.7	.45	29.2
CARSON CREEK NORTH BEAVERHILL LAKE B	.16	33.6	.40	84.0
CHAUVIN MAIN MANNVILLE	.13	1.8	.20	2.7
GILBY VIKING A (1)	.20	7.5	.45	17.0
GOLDEN SPIKE SOUTH D-3A	.45	139.0	.75	232.0
JOFFRE VIKING	.17	13.6	.41	32.8
JUDY CREEK BEAVERHILL LAKE	.16	129.0	.45	364.0
JUDY CREEK WEST BEAVERHILL LAKE	.20	51.2	.45	115.0
KAYBOB BEAVERHILL LAKE A	.16	48.0	.40	120.0
LEDUC-WOODBEND D-2A	.35	71.7	.45	92.3
LEDUC-WOODBEND D-3A	.55	162.0	.65	192.0
PEMBINA CARDIUM (1)	.12	658.0	.29	1588.0
STETTLER D-2	.30	17.4	.41	24.0
SUNDRE RUNDLE A (1)	.25	17.5	.40	28.0
SWAN HILLS BEAVERHILL LAKE A & B (1)	.18	419.0	.44	1026.0
VIRGINIA HILLS (1)	.18	76.8	.40	171.0
WAINWRIGHT WAINWRIGHT (1)	.06	3.6	.20	11.9
TOTAL		1939.9		4226.8

(1) DATA REFERS TO THE PORTION OF THE POOL SUBJECT TO FLUID INJECTION SCHEMES FROM WHICH ADDITIONAL RECOVERY IS ASSURED.

FIGURE III - 1

MAP OF

ALBERTA

SHOWING

RESERVES OF CRUDE OIL IN DESIGNATED FIELDS

RED EARTH
UTIKUMA LAKE
NORMANDVILLE
CADOTTE LAKE
STURGEON LAKE
SNIPE LAKE
DEER MOUNTAIN
MITSUE
STURGEON LAKE SOUTH
SUNSET
LITTLE SMOKY
GOOSE RIVER
FREEMAN
SWAN HILLS
VIRGINIA HILLS
KAYBOB
JUDY CREEK
SIMONETTE
KAYBOB SOUTH
CARSON CK. NTH
HAROLD LAKE
OLDS
EDSON
CARROT CREEK
BIGORAY
CYN PEN
PEMBINA
HAZELDINE
VERMILION
LLOYDMINSTER
BAXTER LAKE
MANNWRIGHT
CHAUVIN
WILLESDEN GREEN
HOMEGLEN RIMBEY
SWAN RIVER
BASHAW
ROCKY MTN HSE
GILBY
OTTOWELL
CLIVE
ALIX
BUFFALO LK
ERSKINE
STETTLER
STETTLER SOUTH
FERRIER
MEDICINE RIVER
HOFFER STH
EWING
ST. VINCENT
LANCAIR
FENN WEST
FENN BIG VALLEY
BARRINGTON
CAROLINE
SUNDRE
NIVERVILLE
WINBOURNE
WESTWARD HO
TWINING NTH.
ROWLEY
HARMATTAN - ELKTON
HARMATTAN EAST
TWINING
YOUNGSTOWN
DRUMHELLER
WEST DRUMHELLER
AERIAL
ROSEBUD
HUSSAR
HUTTON
JESSFORD
MAYTWIN
JENNER
TURNER VALLEY
BANTRY WEST
BANTRY
BANTRY EAST
BANTRY SOUTH
ALDERSON
ALDERSON EAST
BARONS
TABER
HORSEFLY LAKE
TABER S E
TABER S
CHIN COULEE
CONRAD
SPRING COULEE
REDWATER
LEGAL
BRARO
PEAVEY
EXCELSIOR
CAMPBELL
NAMAO
ACHESON EAST
ACHESON
CHAMBERLAIN
YERKAU LAKE
ARMISIE
ELLERSLIE
GOLDEN SPIKE
WHITEMUD
JOARCAM
GLENWRAY
WIZARD LP
BONNY
WESTEROSE
BATTLE N TH
BATTLE
BATTLE S TH
DUHAMEL
NEW NORWAY
SAMSON
MALMO
FIFTH MERIDIAN
SIXTH MERIDIAN

IV. THE ESTABLISHED RESERVES OF SULPHUR IN THE PROVINCE OF ALBERTA

The Board estimates the established recoverable reserves of sulphur in the Province as of December 31, 1964, to be some 75 million long tons. This represents a decrease of some 2 million long tons since December 31, 1963.

Details of the reserve are given in the following tabulation:

	Millions of Long Tons
Established recoverable sulphur at December 31, 1963	77.1
Decrease in reserves during 1964	0.3
Sulphur produced during 1964	1.4
Established recoverable sulphur at December 31, 1964	75.4

The most significant changes during 1964 occurred in the fields shown below:

	Board's Estimate as of			
Plant or Area	Dec. 31, 1963 Million Long Tons	Dec. 31, 1964 Million Long Tons	Change Million Long Tons	Remarks
Bigstone	0.3	1.4	+1.1	Increase in gas reserves.
Pincher Creek	4.0	1.7	-2.3	Decrease in gas reserves.
Waterton	14.6	16.9	+2.3	Increase in gas reserves.
West Whitecourt	13.2	10.2	-3.0	Decrease in gas reserves.

The established recoverable reserves of sulphur are defined as those reserves in fields from which sulphur is currently being recovered, or where, in the opinion of the Board, sulphur will be recovered some time in the future. Table IV-1 is a list of individual fields with established reserves of greater than one million long tons. Reserves in smaller fields are not listed individually but are included in the Provincial total.

The table has been prepared by applying the appropriate hydrogen sulphide content and recovery efficiency to the established recoverable reserves of gas for each pool. Where sulphur is currently being recovered, the recovery efficiency is as specified in the plant approval, or where not specified it is based upon plant experience. Where sulphur is expected to be produced in the future, the recovery has been estimated at 90 to 95 per cent depending upon the size of the reserve and the percentage of hydrogen sulphide in the raw gas.

In addition to the 75 million long tons of sulphur shown in Table IV-1, some 3 million long tons of sulphur are expected to be recovered in conjunction with the approved scheme of Great Canadian Oil Sands for the processing of a portion of the oil sands in the McMurray Area.

ESTABLISHED RESERVES OF SULPHUR IN THE PROVINCE OF ALBERTA, DECEMBER 31, 1964

(1)	(2)	(3)	(4)	(5)	(6)
PLANT	FIELD OR AREA	ZONE	REMAINING RECOVERABLE RAW GAS BCF	HYDROGEN SULPHIDE CONTENT OF RAW GAS PER CENT	REMAINING RECOVERABLE SULPHUR 1000 LONG TONS
-	BERLAND RIVER	LEDUC	400	15.4	2,084
-	BIGSTONE	LEDUC	333	12.2	1,376
COLEMAN	SAVANNA CREEK	MISSISSIPPIAN	513	15.0	2,692
CALGARY	CROSSFIELD	CALGARY MISSISSIPPIAN	636	1.0	225
	CROSSFIELD	CALGARY WABAMUN	1,142	33.0	13,316
					13,541
-	CROSSFIELD EAST	WABAMUN	300	38.0	3,857
-	EDSON	MISSISSIPPIAN	1,765	2.1	1,254
	HARMATTAN-ELKTON	MISSISSIPPIAN	1,231	0.7	292
	HARMATTAN-ELKTON	LEDUC	75	53.4	1,355
					1,647
NEVIS[1]	FENN-BIG VALLEY	NISKU AND LEDUC	62	3.0	60
	NEVIS	DEVONIAN	646	7.0	1,446
	STETTLER	NISKU AND LEDUC	15	3.5	16
					1,522
OKOTOKS	OKOTOKS	WABAMUN	310	34.0	3,764
-	PANTHER RIVER[2]	WABAMUN	110	87.0	3,238
PINCHER CREEK	PINCHER CREEK	MISSISSIPPIAN	470	10.5	1,670
RIMBEY	HOMEGLEN-RIMBEY	LEDUC	800	3.3	893
	WESTEROSE-SOUTH	LEDUC	1,318	1.4	624
					1,517

(1) PROCESSING CARRIED OUT IN TWO SEPARATE PLANTS.
(2) PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.

(1)	(2)	(3)	(4)	(5)	(6)
PLANT	FIELD OR AREA	ZONE	REMAINING RECOVERABLE RAW GAS BCF	HYDROGEN SULPHIDE CONTENT OF RAW GAS PER CENT	REMAINING RECOVERABLE SULPHUR 1000 LONG TONS
-	SIMONETTE[2]	WABAMUN	123	18.0	750
	SIMONETTE[2]	LEDUC	127	16.0	689
					1,439
WATERTON	WATERTON	MISSISSIPPIAN	1,785	25.0	15,768
	WATERTON	DEVONIAN	180	18.0	1,145
					16,913
WEST WHITECOURT	PINE CREEK	WABAMUN	170	35.0	2,080
	PINE CREEK	LEDUC	469	26.0	4,265
	WINDFALL	LEDUC	709	15.6	3,868
					10,213
WIMBORNE	WIMBORNE	LEDUC	331	15.0	1,737
	OTHER FIELDS[3]				6,172
	OTHER FIELDS PRESENTLY CONSIDERED BEYOND ECONOMIC REACH[3]				744
TOTAL					75,380

(3) FIELDS AND AREAS HAVING SULPHUR RESERVES OF UNDER 1,000,000 LONG TONS.

V. TRENDS IN EXPLORATORY DRILLING AND IN THE GROWTH OF GAS AND CRUDE OIL RESERVES IN THE PROVINCE OF ALBERTA

There are two general methods commonly used in estimating the ultimate reserves of gas or crude oil that may be developed in an area; the geological or volume of sediments method and the statistical method. In the geological method an estimate is made of the volume of sediments favorable to the accumulation of oil or gas. To this volume is applied an estimated reserve of oil or gas per unit of sediment. The latter estimate is based on evidence obtained from areas that are geologically similar but that are substantially more fully explored than the area under investigation. The method is useful primarily in estimating ultimate reserves that might be discovered in a relatively large area. Its reliability depends upon the validity of the assumption that evidence in one area can be applied to another area.

The statistical method involves the analysis of statistics regarding reserves discovered in a particular area. Frequently this involves the determination of reserves discovered per exploratory well drilled or exploratory foot drilled. In the Board's analysis consideration has also been given to the appreciation of original estimates of discoveries in the period following the discovery year.

In this section of the report the Board provides its analysis of the statistical data for the period 1947 to 1964 and provides some general conclusions regarding the ultimate reserves of oil and gas that are expected to be discovered in this Province.

Exploratory Wells

Effective January 1, 1964, the Board adopted the Lahee system of well classification utilized by the American Association of Petroleum Geologists and by the Alberta Society of Petroleum Geologists. The Board, however, excludes outpost well from its definition of exploratory wells in this study. The category of total exploratory wells, as used in this report, comprises

(a) new field wildcats,

(b) new pool wildcats,

(c) shallower pool tests, and

(d) deeper pool tests.

Totals of the exploratory wells drilled each year are presented graphically as Figure V-1 for the period 1947 through 1964. Exploratory wells drilled to the end of 1964 total 6,882. As discussed in several earlier reports, the Board still believes that an ultimate density of one exploratory well per ten square miles of prospective area is reasonable, with the result that about 20,000 exploratory wells will eventually be drilled in Alberta.

Trends in the Growth of Gas Reserves

The currently estimated initial marketable gas reserves, shown in Section I, are tabulated in Table V-1 according to year of discovery. In this table, the names of fields and pools having reserves of 10 billion cubic feet or over discovered each year are listed, together with the annual number of exploratory wells drilled and the Board's present estimate of the initial

marketable reserves discovered in each year.

Figure V-2 is a graphical presentation of these data, as well as similar data of previous Board reserve estimates. As indicated by the dashed line on Figure V-2, the long term growth of initial marketable gas reserves due both to new discoveries and to appreciation of known reserves has been about 2.5 trillion cubic feet per year. The spread on Figure V-2, between any two points for a particular year represents the amount of appreciation during the period between successive Board estimates of reserves discovered to the end of that year.

The exploratory drilling and initial gas reserve data of Table V-1, together with the amount of marketable gas produced and the corresponding remaining reserves are summarized by year of discovery in Table V-2. In addition, the table shows the initial marketable gas reserves as estimated by the Board on December 31 of the discovery year. The reserves as estimated at December 31, 1964 per exploratory well drilled, and the reserves as estimated at the end of the discovery year per well drilled, calculated on an annual basis, are shown in columns 9 and 10 respectively of Table V-2. The reserves per exploratory well drilled are also presented graphically as part of Figure V-4.

As in previous reports, the appreciation of gas reserves in the years following discovery has been analyzed in order to estimate the future appreciation of recent discoveries. The method adopted involves determining the percentage increase in estimated initial gas reserves as a function of the elapsed time from the mid-point of the discovery year to the date of subsequent

reserve determinations. Data for discoveries made in each of the years 1951 to 1962 inclusive, are plotted on Figure V-3. A reserve weighted appreciation curve constructed on the basis of these data is shown as a red line on the figure.

This appreciation curve tends to level off after approximately seven years, at which time it may be assumed that the average gas reserve is fully appreciated. The rate of development in individual cases will, of course, be influenced by such factors as existence and proximity of markets, areal extent, and the amount and type of surface processing required.

The current gas reserve estimate has been adjusted to reflect full appreciation using the average curve shown in Figure V-3. The appreciation factors used and the adjusted reserves are presented in Table V-3. Initial gas reserves, now estimated to total 39.8 trillion cubic feet, are expected to appreciate by over two trillion cubic feet to about 42 trillion cubic feet. The fully appreciated gas reserves per exploratory well are shown in column 7 of Table V-3. These data are also presented in Figure V-4.

Table V-2 and V-3 and Figure V-4 show that the gas reserves discovered per exploratory well drilled appears to have declined substantially for the years 1963 and 1964. However, it must be stressed that the main purpose of this analysis is an attempt to establish a long term trend in gas discoveries and a consideration of the data for any particular year or limited period is of little significance. This is particularly true with

respect to the data of the last few years, which has yet to experience a considerable period of appreciation. Figure V-4 does suggest as a long term trend, a slow decline in the reserves discovered per exploratory well drilled.

Ultimate Reserves

The Board has not received new evidence regarding the ultimate reserves of natural gas since the publication of OGCB Report 64-11.(1) The data incorporated into the November, 1964 estimate has been reviewed. On the basis of estimates available from industry, the Board's estimate based on the geological method, and on extrapolation of the long term trend of reserve growth to the ultimate number of exploratory wells expected, the Board still believes that an estimate ultimate reserve for the Province of approximately 100 trillion cubic feet is reasonable.

Trends in the Growth of Oil Reserves

The proved initial crude oil reserves, as currently estimated and shown in Section III, are tabulated in Table V-4 according to year of discovery. The table lists those oil pools having initial proved reserves of some five million barrels or greater discovered each year along with exploratory drilling and presently estimated crude oil reserve statistics.

---

(1) Report on the Applications of Trans-Canada Pipe Lines Limited and Alberta and Southern Gas Co. Ltd. under The Gas Resources Preservation Act, 1956. November, 1964.

Figure V-5 is a graphical presentation of these data, and data of previous Board reserve estimates. The long term growth of proved initial crude oil reserve due to new discoveries and to appreciation of known reserves has been about 0.36 billion stock tank barrels per year, as illustrated by the dashed line on Figure V-5. The spread on Figure V-5 between any two points for a particular year represents the amount of appreciation during the period between successive Board estimates of reserves discovered to the end of the year.

The exploratory drilling and crude oil reserve data of Table V-4, together with the amount of crude oil produced and the corresponding remaining reserves are summarized by year of discovery in Table V-5. In addition, the table indicates the proved initial crude oil reserve as estimated by the Board on December 31, of the discovery year for those pools listed in Table V-4. The reserves as estimated at December 31, 1964, per exploratory well drilled, and the reserves as estimated at the end of the discovery year per well drilled, calculated on an annual basis, are shown in columns 9 and 10 respectively of Table V-5. The reserves per exploratory well drilled are presented graphically as part of Figure V-7.

The appreciation experience of 85 representative crude oil pools was weighted volumetrically and the resulting trend smoothed using a three-year moving average to obtain the normal crude oil reserve appreciation curve shown on Figure V-6. The resulting appreciation factors as shown in column 5 of Table V-6 were applied to the latest three year average of proved reserves

assigned to a particular discovery year. A slight modification was necessary for the last two years for which three-year average appreciation factors and reserves are not available.

From experience in Alberta and other areas, the Board believes that the appreciation of many crude oil reserves will extend over 20 to 30 years. Since only the first 16 years of the appreciation trend is considered, some appreciation beyond that recognized in this report is expected.

The proved initial crude oil reserves, now estimated to total some 7.7 billion stock tank barrels are expected to appreciate by about 800 million barrels to some 8.5 billion stock tank barrels. The resulting appreciated crude oil reserves per exploratory well are shown in column 8 of Table V-6.

The currently established and the appreciated crude oil reserves per exploratory well are presented graphically on Figure V-7, for the period 1947 through 1964. The appropriate data from column 9 of Table V-5, were used for the current ratio of reserves per exploratory well, and from column 8 of Table V-6 for the appropriate ratio. The two plots exhibit extreme fluctuations from year to year as might be anticipated having regard for the major discoveries in certain years.

The long term trend in appreciated crude oil reserves discovered per exploratory well exhibits substantial fluctuations, and although a downward trend is indicated the level of future discoveries can not be predicted with any degree of confidence.

Ultimate Reserves

The Board has encountered considerable difficulty in

making reliable forecasts of the ultimate reserves of crude oil in the Province by projecting the statistical trend. These forecasts indicate that ultimate reserves of some 14 to 16 billion stock tank barrels of oil may be expected in Alberta. The reasonableness of this range has been checked by considering the volume of sediments favorable to the entrapment of oil, considered to be some 280,000 cubic miles. Applying an accumulation factor based on an estimated ratio of ultimate oil reserves to sediments in the United States, the range of 14 to 16 billion stock tank barrels seems reasonable.

TABLE V-1

TRENDS IN EXPLORATORY DRILLING AND GROWTH OF MARKETABLE GAS RESERVES IN ALBERTA

YEAR	EXPLORATORY WELLS DRILLED ANNUAL	EXPLORATORY WELLS DRILLED CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	INITIAL MARKETABLE RESERVES ANNUAL BCF	INITIAL MARKETABLE RESERVES CUMULATIVE BCF
Prior to 1931			Bow Island, Brooks, Foremost, Medicine Hat (Medicine Hat, Bow Island), Pouce Coupe (Peace River, Cadomin), Turner Valley (Mississippian Associated), Viking-Kinsella (Viking), and Wainwright (Viking, Blairmore).	3,129	3,129
1931 to 1940			Aden (Bow Island, Basal Colorado, Mississippian), Bantry, Lloydminister, Princess, Turner Valley (Mississippian Solution), Wildmere, and one small pool.	614	3,743
1941 to 1945			Black Butte (Bow Island, Sunburst-Ellis, Mississippian), Jumping Pound, Oyen (Viking), Suffield (Milk River), and three small pools.	689	4,432
1946		484(E)	Beaverhill Lake-Fort Saskatchewan (Viking), Brooks North-East (Mannville), Lindbergh, Pendant d'Oreille (Bow Island), and Provost.	1,228	5,660
1947	71	555	Fairydell-Bon Accord, Leduc-Woodbend, Manyberries, Medicine Hat (Ellis), Smith Coulee, and three small pools.	758	6,418
1948	124	679	Brooks North-East (Bow Island), Morinville, Pincher Creek, Redwater, and four small pools.	731	7,149

YEAR	EXPLORATORY WELLS DRILLED ANNUAL	EXPLORATORY WELLS DRILLED CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	INITIAL MARKETABLE RESERVES ANNUAL BCF	INITIAL MARKETABLE RESERVES CUMULATIVE BCF
1949	212	891	Acheson East (Basal Blairmore), Bolloque Lake, Boyle-Mustang-Amisk Lake, Campbell-Namao, Castor, Cessford, Excelsior, Golden Spike, Inland, Joarcam, Lac La Biche, Normandville (Gething), Plain Lake, Rochester, Stettler, Westlock (Viking), Willingdon, and thirteen small pools.	2,136	9,285
1950	210	1,101	Acheson, Countess (Bow Island), Drumheller (Blairmore), Fenn-Big Valley, Jarvie, Rolling Hills (Bow Island), Sibbald, Whitelaw, and twenty small pools.	403	9,688
1951	346	1,447	Atlee-Buffalo (Bow Island), Bashaw (Leduc Associated), Belloy (Gething, Mississippian), Bonnie Glen, Clive, Countess (Basal Colorado), Etzikom (Bow Island), Figure Lake, Glen Park, Hamelin Creek, Majeau Lake, Millet, Okotoks, Tangent, Three Hills Creek (Belly River), Viking-Kinsella (Blairmore, Devonian), Westlock (Basal Blairmore), Wizard Lake, and Twenty-two small pools.	1,517	11,205
1952	442	1,889	Alix, Bindloss (Viking), Bittern Lake, Chigwell, Comrey (Bow Island), Dixonville, Eaglesham (Mississippian), Erskine, Gordondale (Paddy), Hackett, Hairy Hill, Hamilton Lake (Viking), Hercules, Holmberg, Hussar (Blairmore), Minnehik-Buck Lake, Nevis, Olds, Phil Can, Rycroft, St. Albert-Big Lake, St. Brides, West Drumheller, Westerose, Wildunn Creek, and twenty-three small pools.	3,014	14,219

YEAR	EXPLORATORY WELLS DRILLED ANNUAL	EXPLORATORY WELLS DRILLED CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	INITIAL MARKETABLE RESERVES ANNUAL BCF	INITIAL MARKETABLE RESERVES CUMULATIVE BCF
1953	338	2,227	Atlee-Buffalo (Basal Blairmore), Brooks North-East (Detrital), Donalda (Viking, Detrital), Dyberg, Enchant, Eyremore, Flatbush (Mannville), Gilby (Viking, Jurassic), Gordondale (Gething), Homeglen-Rimbey, Kessler (Viking), Killam (Blairmore), Kneller, Parkland North-East, Pembina (Cardium Solution), Pouce Coupe South (Peace River, Triassic), Rich, Samson, Sedalia, Steen River, Sturgeon Lake South (Gething, Leduc), Sturgeon Lake South General Area (Gething, Permo-Penn), Sylvan Lake (Blairmore, Mississippian), Three Hills Creek (Viking, Mississippian), Usona, Waterglen, Wayne-Rosedale (Viking, Blairmore), Westerose South (Leduc), Wood River, and fifteen small pools.	4,795	19,014
1954	368	2,595	Alderson (Bow Island), Alexander, Bellshill Lake (Viking, Blairmore), Bindloss (Basal Blairmore), Braeburn (Cadomin, Triassic, Permo-Penn), Carbon (Viking), Countess (Blairmore), Crossfield (Wabamun), Garrington (Leduc), Ghost Pine (Blairmore), Gilby (Basal Blairmore, Pekisko, Banff, Wabamun), Harmattan-Elkton (Mississippian Associated), Holborne, Hussar (Viking), Medicine River (Blairmore D-3 Associated), Pembina (Belly River), Saddle Hills (Peace River, Gething), Sarcee, Savanna Creek, Sturgeon Lake South General Area (Triassic), Turin (Bow Island, Basal Blairmore), Willesden Green (Cardium Solution), Wimborne (Viking, Leduc), and twelve small pools.	3,422	22,436

YEAR	EXPLORATORY WELLS DRILLED ANNUAL	EXPLORATORY WELLS DRILLED CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	INITIAL MARKETABLE RESERVES ANNUAL BCF	INITIAL MARKETABLE RESERVES CUMULATIVE BCF
1955	351	2,946	Aden (Sunburst-Ellis), Carbon (Blairmore), Chinook Ridge, Etzikom (Basal Blairmore), Harmattan-Elkton (Mississippian Solution), Knappen (Mississippian, Sunburst-Ellis), Lone Pine Creek (Wabamun), Pakowki Lake, Red Willow (Viking), Richdale, Rolling Hills (Basal Colorado), Sturgeon Lake South (Triassic), Sundre (Mississippian Associated and Solution), Willesden Green (Cardium Non-Associated), Windfall (Viking, Leduc), and nineteen small pools.	1,065	23,501
1956	373	3,319	Alderson (Second White Specks), Beaverhill Lake-Fort Saskatchewan (Basal Blairmore), Belloy (Notikewin), Carstairs (Basal Blairmore), Connorsville, Crossfield (Cardium Solution, Mississippian), Eaglesham (Gething, Cadomin), Esther (Victoria), Goodwin Lake, Harmattan East (Mississippian Associated), Hussar (Basal Colorado), Hutton (Basal Mannville), Innisfail (Mississippian, Wabamun), Joffre (Nisku Solution), Kirkcaldy (Basal Mannville), Leafland (Basal Blairmore, Mississippian), Mazeppa, Medicine River (Jurassic Solution), Mountain Park, Normandville (Triassic, Mississippian), Obed, Paddle River, Pembina (Viking, Mississippian), Pine Creek (Wabamun), Pouce Coupe South (Doe Creek, Cadomin), Standard, Steep Creek (Gething, Triassic), Sturgeon Lake South (Wabamun), Two Creek, Waterton (Mississippian), West Prairie, and twenty-seven small pools.	4,559	28,060

YEAR	EXPLORATORY WELLS DRILLED ANNUAL	EXPLORATORY WELLS DRILLED CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	INITIAL MARKETABLE RESERVES ANNUAL BCF	INITIAL MARKETABLE RESERVES CUMULATIVE BCF
1957	452	3,771	ANTELOPE, BLUERIDGE, BOUNDARY LAKE SOUTH (CADOMIN), CAROLINE (BLAIRMORE), CARSON CREEK, CHISHOLM, CROSSFIELD (BASAL BLAIRMORE), ESTHER (BANFF), FAUST SOUTH, GARRINGTON (VIKING, BLAIRMORE), GILBY (BLAIRMORE SOLUTION), HARMATTAN EAST (MISSISSIPPIAN SOLUTION), HARMATTAN-ELKTON (MISSISSIPPIAN NON-ASSOCIATED), INNISFAIL (LEDUC), JOFFRE (VIKING, BASAL BLAIRMORE), KAYBOB (NOTIKEWIN, CADOMIN, WINTERBURN, BEAVERHILL LAKE), KILLAM (VIKING), LAMBERT CREEK, LOVETT RIVER (RUNDLE), PEMBINA (BLAIRMORE, JURASSIC), PINE CREEK (LEDUC), SADDLE HILLS (PERMO-PENN), STOLBERG, SWAN HILLS (BEAVERHILL LAKE SOLUTION), VIRGINIA HILLS (BLAIRMORE, BEAVERHILL LAKE SOLUTION, SLAVE POINT), WILLESDEN GREEN (BELLY RIVER), AND TWENTY SMALL POOLS.	2,417	30,477
1958	428	4,199	BERLAND RIVER, BERLAND RIVER WEST, BOUNDARY LAKE SOUTH (MISSISSIPPIAN), CARSON CREEK NORTH, CARSTAIRS (MISSISSIPPIAN), CLEAR HILLS, FOX CREEK WEST (NISKU), GILBY (JURASSIC SOLUTION), GREENCOURT (JURASSIC-DETRITAL), LONE PINE CREEK (BASAL BLAIRMORE), PENHOLD, POUCE COUPE SOUTH (GETHING), PREVO, SIMONETTE (LEDUC), STEEP CREEK (PERMO-PENN), WATERTON (DEVONIAN), WILDCAT HILLS, WOKING, AND TWENTY-SEVEN SMALL POOLS.	2,300	32,777
1959	438	4,637	ATLEE-BUFFALO (BASAL COLORADO), BIGORARY (MISSISSIPPIAN), BIGSTONE (DUNVEGAN), BRAZEAU RIVER, BURNT TIMBER, DRUMHELLER (VIKING), FOX CREEK WEST (GETHING), GARRINGTON (MISSISSIPPIAN), JUDY CREEK, LOOKOUT BUTTE, LOVETT RIVER (BLAIRMORE), MEDICINE RIVER (BLAIRMORE, JURASSIC ASSOCIATED), RETLAW (BOW ISLAND, BASAL BLAIRMORE), SIMONETTE (WABAMUN), WASKAHIGAN, WORSLEY, AND NINETEEN SMALL POOLS.	1,604	34,381

YEAR	EXPLORATORY WELLS DRILLED ANNUAL	EXPLORATORY WELLS DRILLED CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	INITIAL MARKETABLE RESERVES ANNUAL BCF	INITIAL MARKETABLE RESERVES CUMULATIVE BCF
1960	412	5,049	Bigorary (Blairmore), Bigstone (Gething, Leduc), Black Butte (Basal Colorado), Brown Creek, Comrey (Second White Specks), Crossfield East (Mississippian), Fox Creek (Triassic), Jenner (Bow Island, Basal Colorado), Judy Creek South (Mississippian), Kaybob (Gething), Kaybob South (Viking), Kirkcaldy (Mississippian), Long Coulee (Mannville), Moose Mountain, Nordegg, Redland (Blairmore), Rowley (Viking, Mississippian), Simonette (Cadomin), Sturgeon Lake (Gething), Sturgeon Lake South General Area (Cadomin), Sylvan Lake (Jurassic Solution, Mississippian Solution), Three Hills (Viking, Blairmore), Wayne-Rosedale (Belly River), Westerose South (Wabamun), Wildhorse Creek, Willesden Green (Basal Blairmore), Wilson Creek (Mississippian), Wolf Lake, and twenty-seven small pools.	1,011	35,392
1961	395	5,444	Benjamin Creek (Mississippian), Brooks North-East (Basal Colorado), Craigend, Crossfield East (Wabamun), Greencourt (Mississippian), Harmattan-Elkton (Leduc), Jumping Pound West (Mississippian), Kaybob South (Cadomin, Nisku, Beaverhill Lake), Marten Hills (Wabiskaw, Grand Rapids, Wabamun), Pendant d'Oreille (Mannville), Plover Lake (Viking), Retlaw (Basal Colorado), Rowley (Mannville), Sundre (Viking), Sylvan Lake (Leduc), Twining North (Mississippian), Verger (Basal Mannville), Wilson Creek (Banff), Wimborne (Mississippian), Windfall (Mississippian), and twelve small pools.	2,096	37,488

YEAR	EXPLORATORY WELLS DRILLED ANNUAL	EXPLORATORY WELLS DRILLED CUMULATIVE	MAJOR GAS RESERVES DISCOVERED	INITIAL MARKETABLE RESERVES ANNUAL BCF	INITIAL MARKETABLE RESERVES CUMULATIVE BCF
1962	433	5,877	Bantry East (Sunburst Associated), Bashaw (Blairmore), Black Butte (Mannville), Braeburn (Cadotte), Carbon (Mississippian), Countess (Mississippian), Edson (Mississippian), Hunter Valley, Kaybob South (Triassic), Kessler (Mannville), Marten Hills (Pelican), Strathmore, Sylvan Lake (Jurassic, Leduc Solution), Twining (Mississippian Non-Associated), Twining North (Mannville), Verger (Bow Island), Virginia Hills (Triassic), and eleven small pools.	1,763	39,251
1963	424	6,301	Boundary Lake South (Boundary Lake), Edson (Gething), Goose River (Beaverhill Lake), Jenner (Basal Colorado, Blairmore), Medicine River (Mississippian Non-Associated), Pine North-west (Leduc), Swalwell (Mississippian), Three Hills Creek (Leduc), and twenty-six small pools.	268	39,519
1964	581	6,882	Carbon (Basal Colorado), Dorothy (Glauconitic), Gold Creek (Wabamun), Gilby (Cardium), Joffre (Leduc), Kaybob (Spirit River), Lone Pine Creek (Leduc), Marsh Head Creek (Leduc), Medicine River (Detrital), Mitsue (Gilwood), Smoky River (Wabamun), Sturgeon Lake South (Cadomin), Three Hills (Mississippian), and twenty-four small pools.	257	39,776

TABLE V-2

TRENDS IN EXPLORATORY DRILLING AND IN THE DISCOVERY OF INITIAL MARKETABLE GAS RESERVES

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	EXPLORATORY WELLS DRILLED		MARKETABLE GAS RESERVES AS OF DECEMBER 31, 1964 BILLIONS OF CUBIC FEET				INITIAL MARKETABLE GAS RESERVES AS OF DECEMBER 31 OF THE DISCOVERY YEAR		GAS RESERVES AS OF THE END OF THE DISCOVERY YEAR PER EXPLORATORY WELL
DISCOVERY YEAR	ANNUAL	CUMULATIVE	INITIAL	PRODUCED	REMAINING	CUMULATIVE INITIAL	BCF	GAS RESERVES PER EXPLORATORY WELL BCF/WELL ANNUAL	BCF/WELL
PRIOR TO 1947		484 (1)	5660	1864	3796	5660		-	
1947	71	555	758	173	585	6418		10.7	
1948	124	679	731	237	494	7149		5.9	
1949	212	891	2136	284	1852	9285		10.1	
1950	210	1101	403	44	359	9688		1.9	
1951	346	1447	1517	187	1330	11205	234	4.4	0.7
1952	442	1889	3014	344	2670	14219	668	6.8	1.5
1953	338	2227	4795	567	4228	19014	1131	14.2	3.3
1954	368	2595	3422	185	3237	22436	650	9.3	1.8
1955	351	2946	1065	44	1021	23501	421	3.0	1.2
1956	373	3319	4559	204	4355	28060	736	12.2	2.0
1957	452	3771	2417	140	2277	30477	646	5.3	1.4
1958	428	4199	2300	190	2110	32777	1232	5.4	2.9
1959	438	4637	1604	34	1570	34381	543	3.7	1.2
1960	412	5049	1011	5	1006	35392	609	2.5	1.5
1961	395	5444	2096	7	2089	37488	336	5.3	0.9
1962	433	5877	1763	-	1763	39251	291	4.1	0.7
1963	424	6301	268	-	268	39519	116	0.6	0.3
1964	581	6882	257	-	257	39776	257	0.4	0.4

(1) ESTIMATED

TABLE V-3

ANTICIPATED APPRECIATION OF GAS RESERVES AND CORRESPONDING ADJUSTED RESERVES PER EXPLORATORY WELL

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	INITIAL MARKETABLE RESERVES AS OF DECEMBER 31, 1964	AVERAGE DISCOVERY DATE TO DECEMBER 31, 1964		ULTIMATE INITIAL MARKETABLE RESERVES BILLIONS OF CUBIC FEET		ADJUSTED GAS RESERVES PER EXPLORATORY WELL BCF/WELL
DISCOVERY YEAR	BCF	YEARS	APPRECIATION FACTOR	ANNUAL	CUMULATIVE	ANNUAL
Prior to 1958	30,477	7.5	1.0		30,477	
1958	2,300	6.5	1.01	2,323	32,800	5.4
1959	1,604	5.5	1.02	1,636	34,436	3.7
1960	1,011	4.5	1.09	1,102	35,538	2.7
1961	2,096	3.5	1.21	2,536	38,074	6.4
1962	1,763	2.5	1.44	2,539	40,613	5.9
1963	268	1.5	1.9	509	41,122	1.2
1964	257	0.5	4	1,028	42,150	1.8

TABLE V-4

TRENDS IN EXPLORATORY DRILLING AND GROWTH OF PROVED CRUDE OIL RESERVES IN THE PROVINCE OF ALBERTA

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL PROVED RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR OIL POOLS DISCOVERED	ANNUAL MILLIONS OF BBL.	CUMULATIVE MILLIONS OF BBL.
Prior to 1931			Turner Valley Rundle, Wainwright Wainwright, and Two Small Pools	137	137
1931 to 1940			Lloydminster Sparky, and One Small Pool	20	157
1941 to 1946		484(E)	Eight Small Pools	7	164
1947	71	555	Del Bonita Rundle, Leduc-Woodbend D-2A, Leduc-Woodbend D-3A	285	449
1948	124	579	Bantry Mannville, Leduc-Woodbend D-3B, Redwater D-3, and Three Small Pools	814	1,263
1949	212	891	Excelsior D-2, Golden Spike South D-3A, Joarcam Viking, Stettler D-2, Stettler Main D-3, and Six Small Pools	353	1,616
1950	210	1,101	Acheson D-3, Duhamel North D-3, Fenn-Big Valley Fenn-Big Valley D-2, Leduc-Woodbend D-2B, and Eleven Small Pools	324	1,940
1951	346	1,447	Duhamel D-2, Drumheller D-2A, Glen Park D-3A, New Norway D-2, Wizard Lake D-3A, and Seventeen Small Pools	270	2,210
1952	442	1,889	Bonnie Glen D-3A, Malmo D-2, Sturgeon Lake D-3, West Drumheller D-2A, Westerose D-3, and Twenty-Three Small Pools	569	2,779
1953	338	2,227	Erskine D-3, Fairydell-Bon Accord Fairydell D-3, Gilby Viking A, Homeglen-Rimbey D-3, Joffre Viking, Pembina Cardium, Sturgeon Lake South D-3, and Sixteen Small Pools	2,025	4,804
1954	368	2,595	Fenn-Big Valley Fenn North D-3, Garrington Cardium A & B, Glenevis Banff, Little Smoky D-3, Medicine River Pekisko 1, Pembina Belly River 1, Willesden Green Cardium, and Fourteen Small Pools	71	4,875

(1)	(2)	(3)	(4)	(5)	(6)
	EXPLORATORY WELLS DRILLED			INITIAL PROVED RESERVES	
YEAR	ANNUAL	CUMULATIVE	MAJOR OIL POOLS DISCOVERED	ANNUAL MILLIONS OF BBL.	CUMULATIVE MILLIONS OF BBL.
1955	351	2,946	Harmattan-Elkton Main Rundle, Sundre Rundle A, Westward Ho Rundle A, and Nine Small Pools	100	4,975
1956	373	3,319	Bellshill Lake Blairmore, Crossfield Cardium A, Joffre D-2, Red Earth Granite Wash, St. Albert-Big Lake Big Lake D-3, Wimborne D-3A, and Fourteen Small Pools	107	5,082
1957	452	3,771	Gilby Jurassic B, Harmattan East Rundle, Innisfail D-3, Kaybob Beaverhill Lake A, Swan Hills Beaverhill Lake A & B, Virginia Hills Beaverhill Lake, and Twelve Small Pools	1,530	6,612
1958	428	4,199	Carson Creek North Beaverhill Lake B, Hussar Ostracod A, Pembina Keystone Belly River B, Simonette D-3, and Sixteen Small Pools	172	6,784
1959	458	4,637	Carson Creek North Beaverhill Lake A, Deer Mountain Beaverhill Lake, Judy Creek Beaverhill Lake, Judy Creek West Beaverhill Lake, Pembina Keystone Belly River C, and Eighteen Small Pools	592	7,376
1960	412	5,049	Fourteen Small Pools	12	7,388
1961	395	5,444	Buffalo Lake D-3, Fenn West D-2A, Twining North Rundle, and Eighteen Small Pools	23	7,411
1962	433	5,877	Kaybob South Triassic, Medicine River Jurassic D, Snipe Lake Beaverhill Lake, Sylvan Lake Pekisko B, and Twenty-Seven Small Pools	88	7,499
1963	424	6,301	Bantry East Mannville, Cyn-Pem Cardium, Goose River Beaverhill Lake, Sylvan Lake Elkton C, Utikuma Lake Granite Wash A, and Forty-Six Small Pools	68	7,567
1964	581	6,882	Mitsue Gilwood A and Twenty-Seven Small Pools	61	7,628

TABLE V-5

TRENDS IN EXPLORATORY DRILLING AND THE DISCOVERY OF INITIAL PROVED CRUDE OIL RESERVES

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	EXPLORATORY WELLS DRILLED		CRUDE OIL RESERVES AS OF DECEMBER 31, 1964 MILLIONS OF STOCK TANK BARRELS				INITIAL CRUDE OIL RESERVES AS OF DECEMBER 31, OF THE DISCOVERY YEAR MILLIONS OF STBBL	CRUDE OIL RESERVES PER EXPLORATORY WELL MILLIONS OF STBBL/WELL	CRUDE OIL RESERVES AS OF THE END OF THE DISCOVERY YEAR PER EXPLORATORY WELL MILLIONS OF STBBL/WELL
DISCOVERY YEAR	ANNUAL	CUMULATIVE	INITIAL	PRODUCED	REMAINING	CUMULATIVE INITIAL		ANNUAL	ANNUAL
PRIOR TO 1947		484	164	142	22	164			
1947	71	555	285	221	64	449	41	4.01	0.577
1948	124	679	814	306	508	1,263	3	6.56	0.024
1949	212	891	353	115	238	1,616	29	1.67	0.137
1950	210	1,101	324	126	198	1,940	17	1.54	0.081
1951	346	1,447	270	64	206	2,210	77	0.78	0.223
1952	442	1,889	569	139	430	2,779	75	1.29	0.170
1953	338	2,227	2,025	442	1,583	4,804	216	5.99	0.639
1954	368	2,595	71	29	42	4,875	3	0.19	0.008
1955	351	2,946	100	33	67	4,975	56	0.28	0.160
1956	373	3,319	107	38	69	5,082	34	0.29	0.091
1957	452	3,771	1,530	115	1,415	6,612	63	3.38	0.139
1958	428	4,199	172	16	156	6,784	7	0.40	0.016
1959	438	4,637	592	32	560	7,376	86	1.35	0.196
1960	412	5,049	12	2	10	7,388	1	0.03	0.002
1961	395	5,444	23	3	20	7,411	2	0.06	0.005
1962	433	5,877	88	8	80	7,499	8	0.20	0.018
1963	424	6,301	68	3	65	7,567	9	0.16	0.021
1964	581	6,882	61	0	61	7,628	58	0.10	0.100

TABLE V-6

ANTICIPATED APPRECIATION OF PROVED CRUDE OIL RESERVES
AND CORRESPONDING ADJUSTED PROVEN RESERVES PER EXPLORATORY WELL

DISCOVERY YEAR	(2) PROVEN RESERVES AS OF DECEMBER 31, 1964 MILLIONS OF STBBL	(3) THREE - YEAR MOVING AVERAGE OF PROVEN RESERVES AS OF DECEMBER 31, 1962, 1963 & 1964 MILLIONS OF STBBL	(4) PERIOD FROM DISCOVERY YEAR TO DECEMBER 31, 1964 YEARS	(5) APPRECIATION FACTOR	(6) ADJUSTED PROVEN RESERVES MILLIONS OF STBBL ANNUAL	(7) ADJUSTED PROVEN RESERVES MILLIONS OF STBBL CUMULATIVE	(8) ADJUSTED PROVEN CRUDE OIL RESERVES PER EXPLORATORY WELL MILLIONS OF STBBL/WELL ANNUAL
PRIOR TO 1949	1,263	1,263		1.00		1,263	
1949	353	352	15	1.03	363	1,626	1.71
1950	324	293	14	1.05	308	1,934	1.47
1951	270	261	13	1.09	284	2,218	0.82
1952	569	545	12	1.13	616	2,834	1.39
1953	2,025	1,619	11	1.19	1,927	4,761	5.70
1954	71	56	10	1.25	70	4,831	0.19
1955	100	90	9	1.33	120	4,951	0.34
1956	107	84	8	1.43	120	5,071	0.32
1957	1,530	987	7	1.55	1,530	6,601	3.38
1958	172	109	6	1.73	189	6,790	0.44
1959	592	381	5	2.00	762	7,552	1.74
1960	12	12	4	2.43	29	7,581	0.07
1961	23	12	3	3.19	38	7,619	0.10
1962	88	32	2	4.78	153	7,772	0.35
1963	68	23	1	6.98	161	7,933	0.38
1964	61	60	0	9.18	551	8,484	0.95

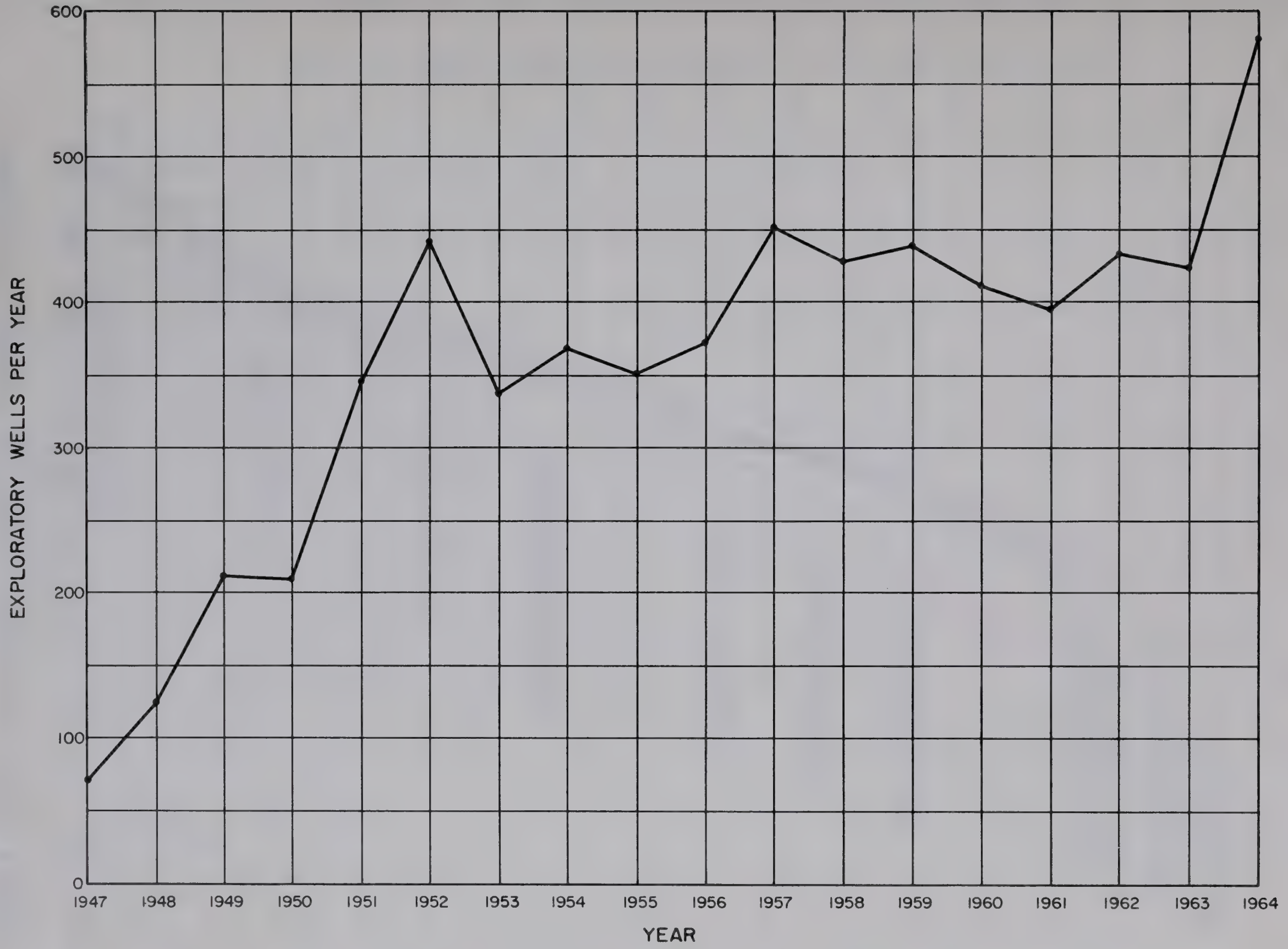


FIGURE V-1 – TRENDS IN EXPLORATORY DRILLING

OIL AND GAS CONSERVATION BOARD
CALGARY, ALBERTA JUNE, 1965

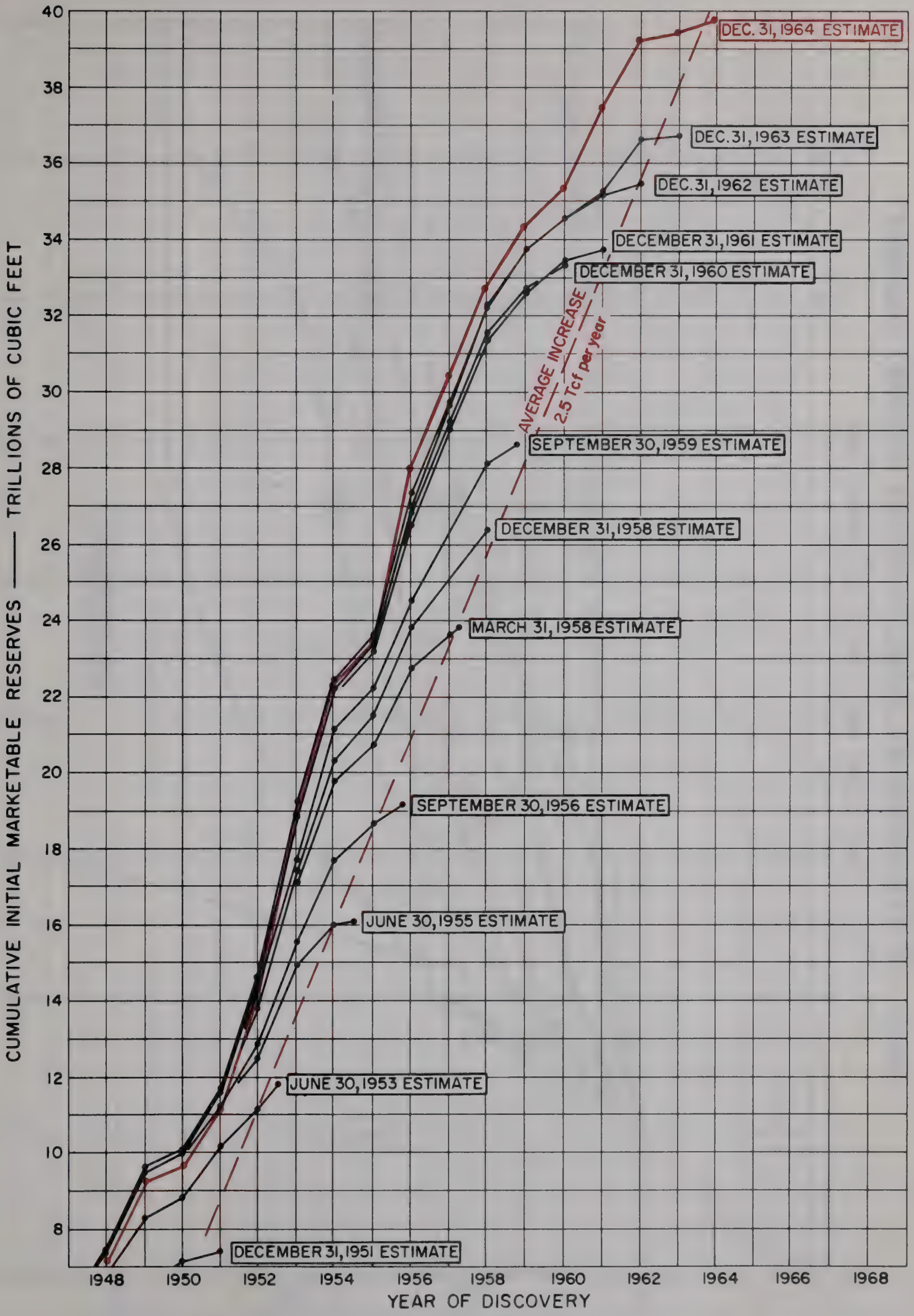


FIGURE V-2 GROWTH OF INITIAL MARKETABLE GAS RESERVES

OIL AND GAS CONSERVATION BOARD
CALGARY, ALBERTA MAY, 1965

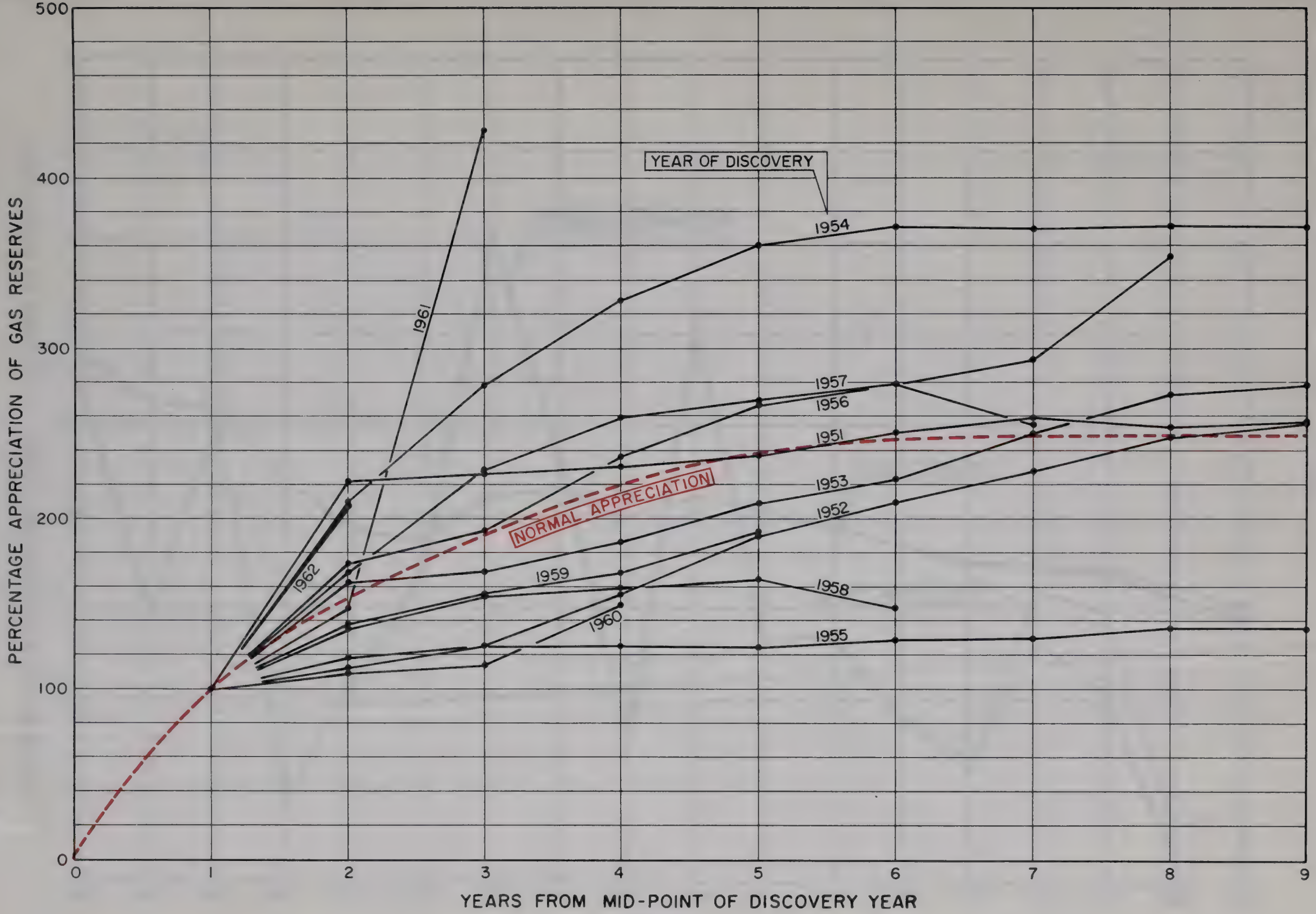


FIGURE V-3 PERCENTAGE APPRECIATION OF GAS RESERVES REFERRED TO RESERVES ONE YEAR FROM DATE OF DISCOVERY

OIL AND GAS CONSERVATION BOARD
CALGARY, ALBERTA JUNE, 1965

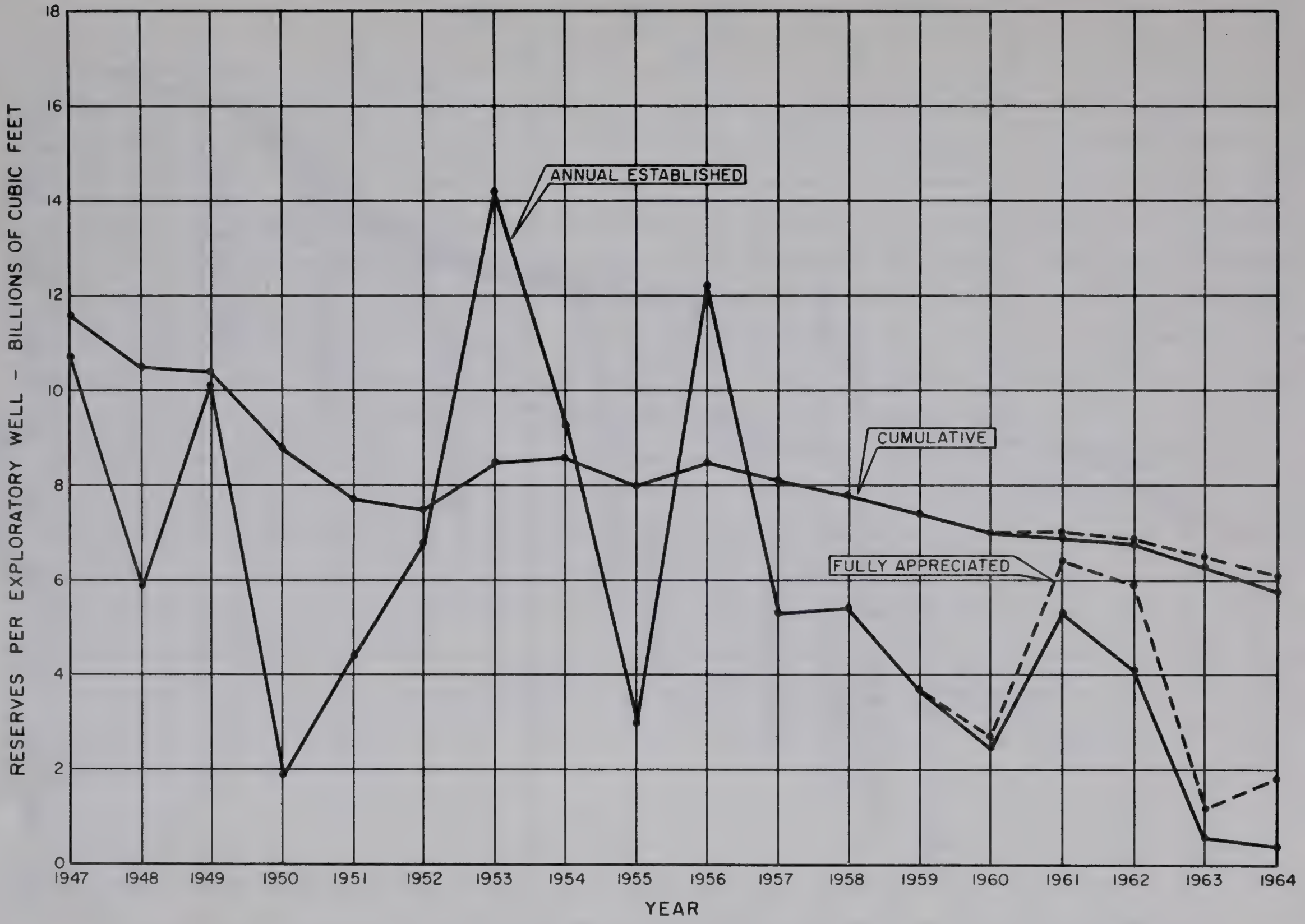
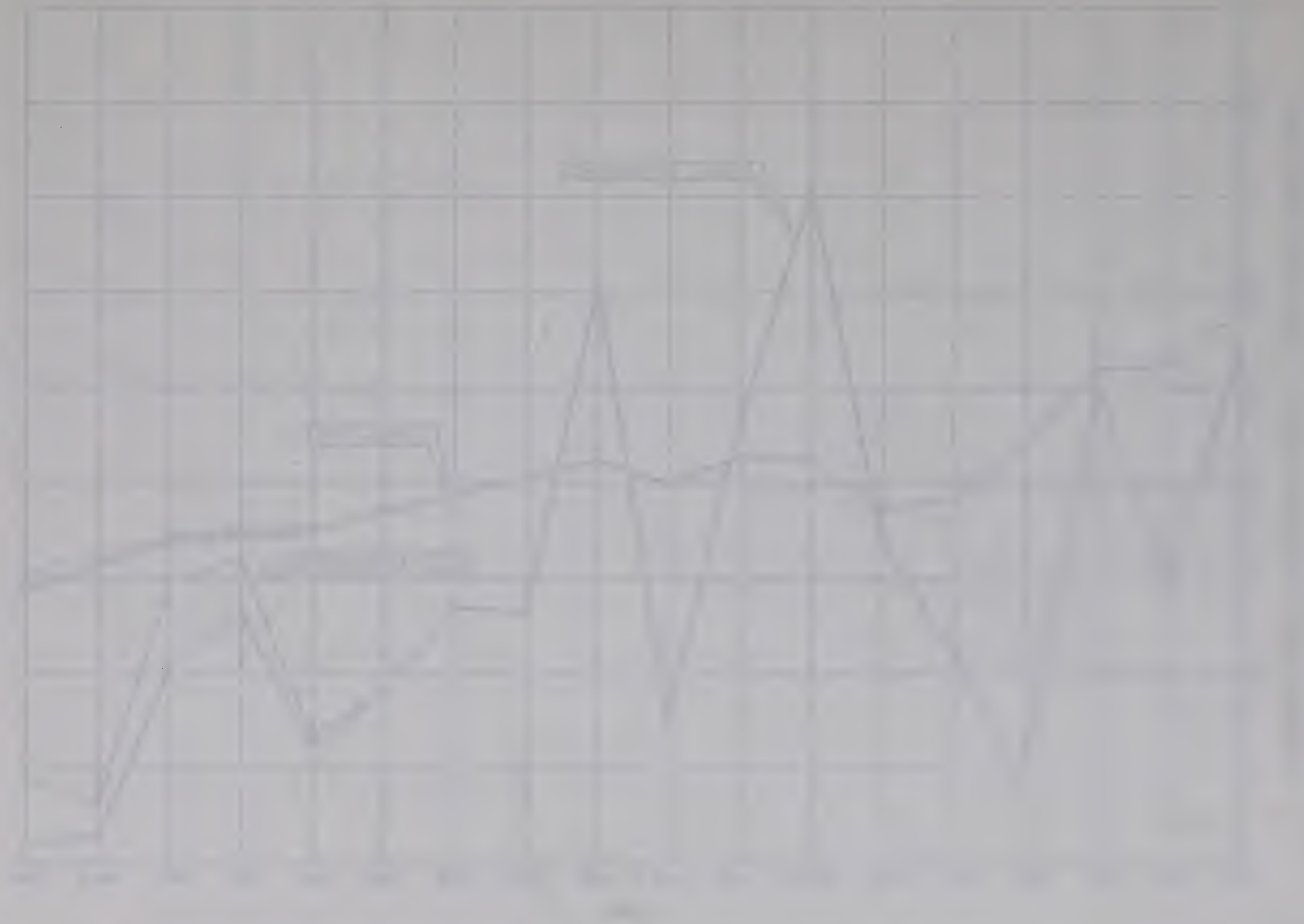


FIGURE V-4 — TRENDS IN THE DISCOVERY OF GAS RESERVES PER EXPLORATORY WELL

OIL AND GAS CONSERVATION BOARD
CALGARY, ALBERTA JUNE, 1965



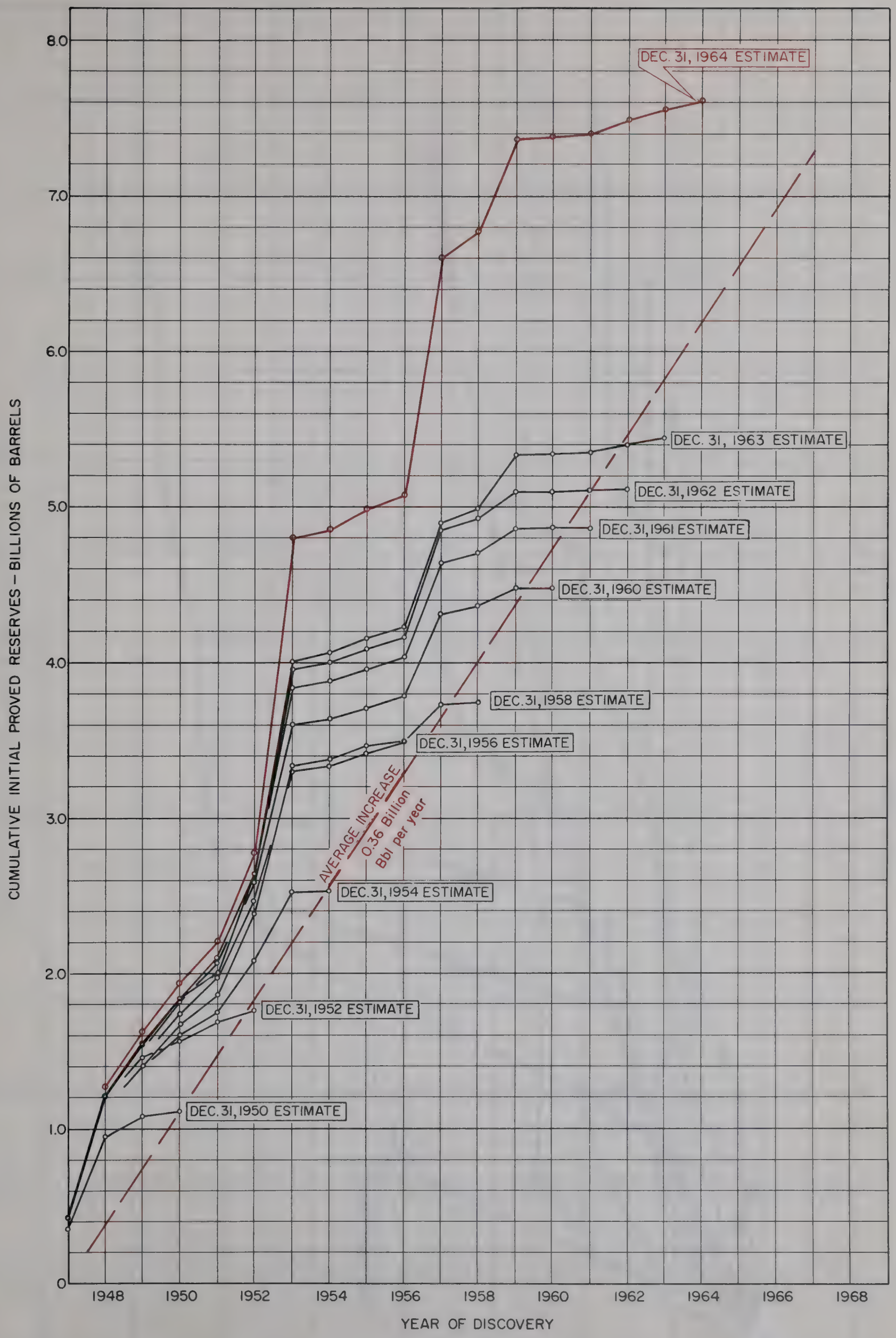


FIGURE V-5 — GROWTH OF INITIAL PROVED CRUDE OIL RESERVES

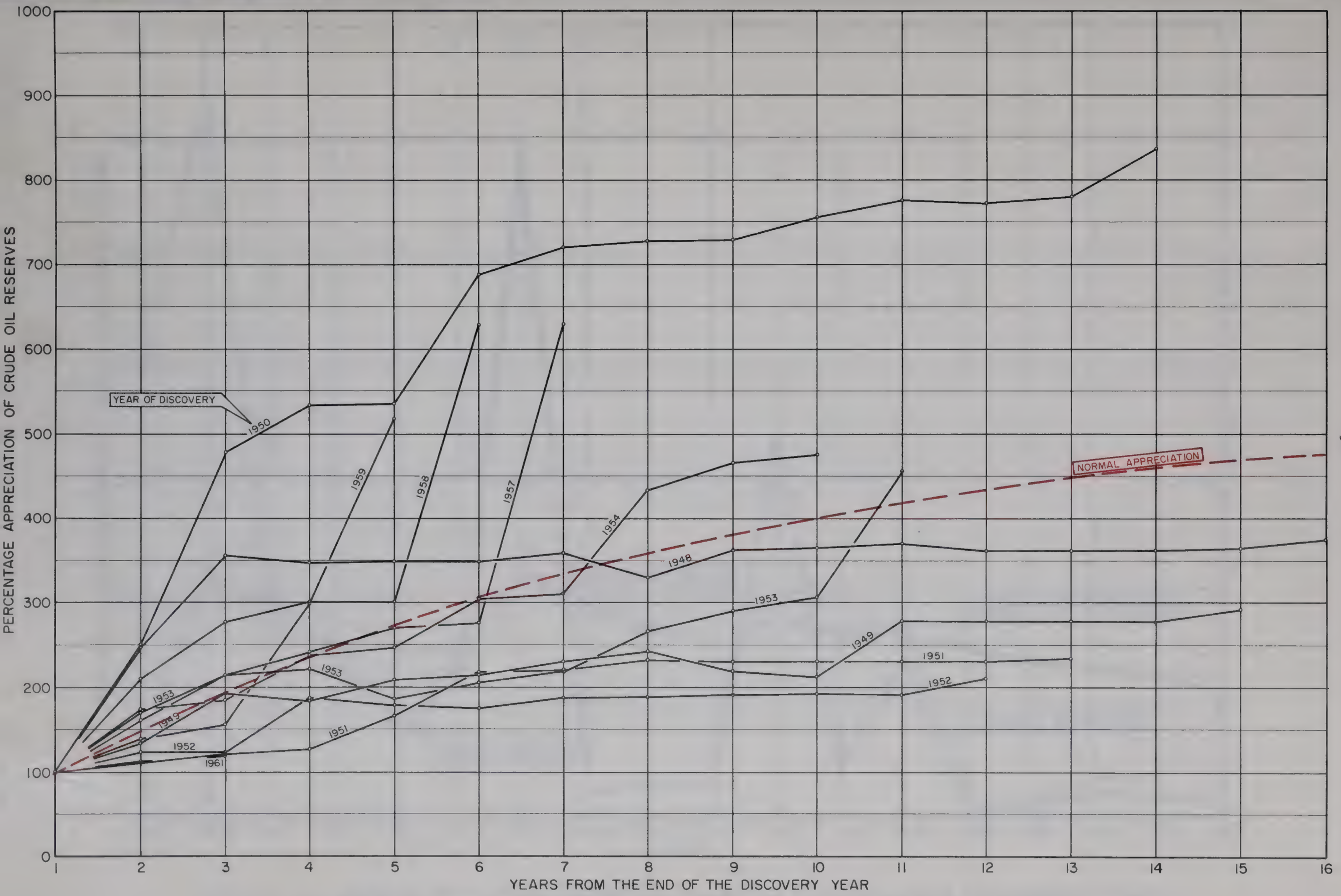


FIGURE V-6 PERCENTAGE APPRECIATION OF CRUDE OIL RESERVES REFERRED TO RESERVES AT THE YEAR END FOLLOWING THE DISCOVERY YEAR

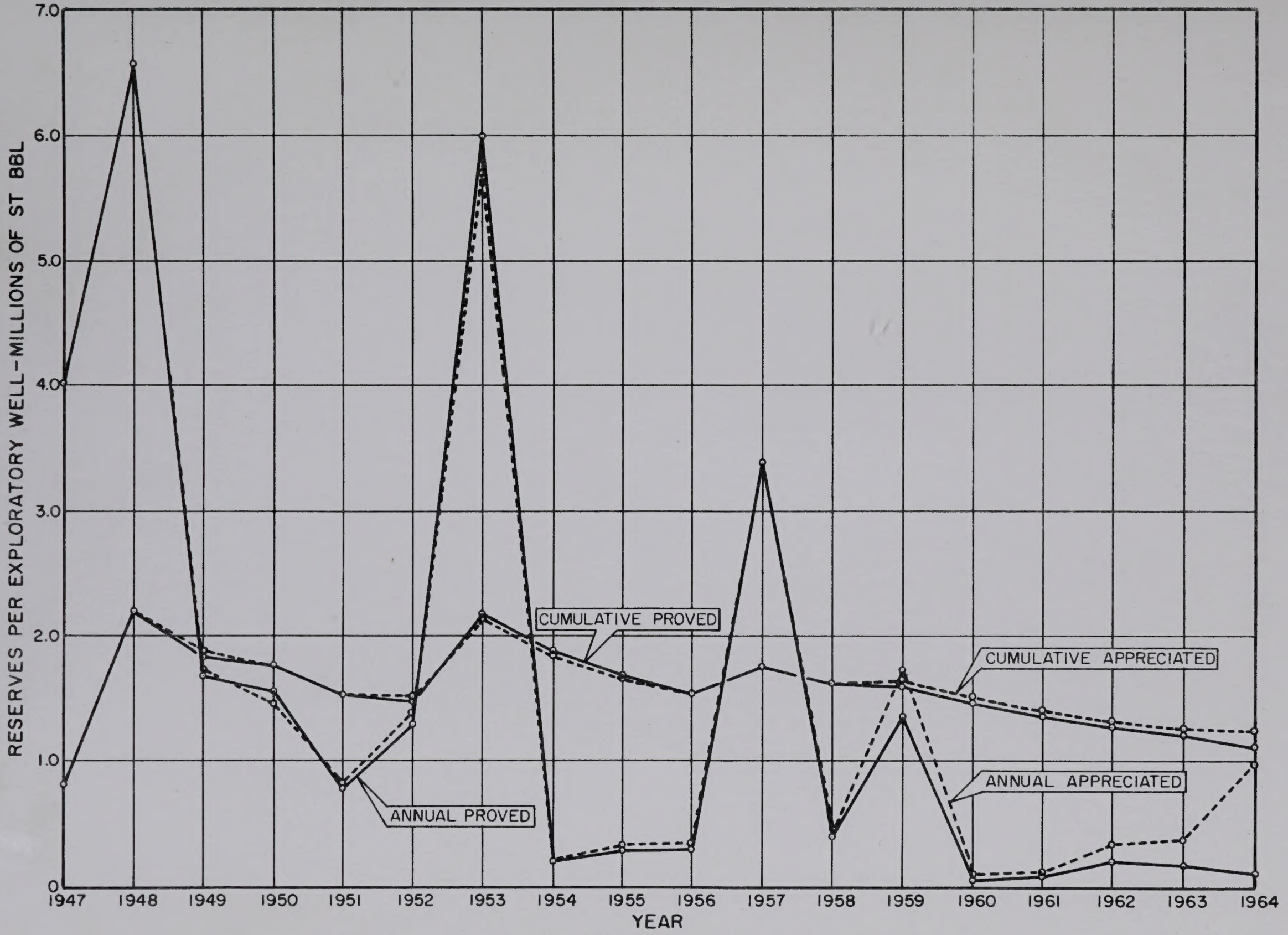
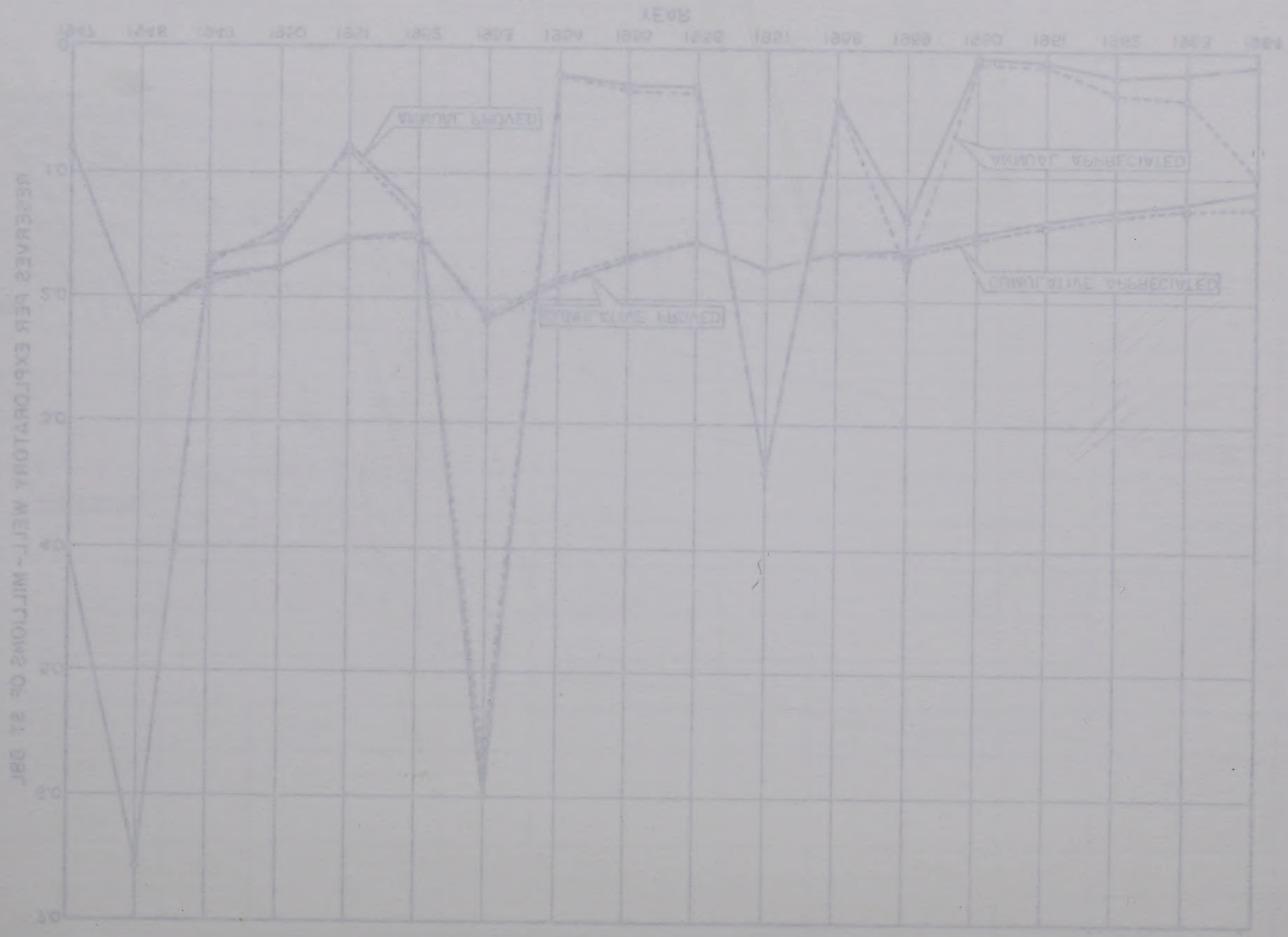


FIGURE V-7 TRENDS IN THE DISCOVERY OF CRUDE OIL RESERVES PER EXPLORATORY WELL

OIL AND GAS CONSERVATION BOARD


ANNUAL FINDING
CUMULATIVE FINDING
ANNUAL DISCOVERY
CUMULATIVE DISCOVERY
YEAR
0
10
20
30
40
50
60
70
80
90
100